AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF BEHAVIORAL MODIFICATION THERAPY ON NOCTURNAL ENURESIS AMONG CHILDREN OF PRIMARY CARE GIVERS (6-12YEARS) AT SELECTED URBAN AREA, VELLORE.

M.Sc (NURSING) DEGREE EXAMINATION
BRANCH-II CHILD HEALTH NURSING

SRI NARAYANI COLLEGE OF NURSING

VELLORE-55.

A Dissertation Submitted to

THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY,

CHENNAI - 600 032.

In partial fulfillment of the requirement for the degree of

MASTER OF SCIENCE IN NURSING.

OCTOBER-2016.

CERTIFICATE

This is to certify that this dissertation titled **"AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF BEHAVIORAL MODIFICATION THERAPY ON NOCTURNAL ENURESIS AMONG CHILDREN OF PRIMARY CARE GIVERS (6-12YEARS) AT SELECTED URBAN AREA, VELLORE."** is a bonafide research work done by **Mrs. SARITHA.V,** Sri Narayani College of Nursing, Vellore – 55, in partial fulfilment of the requirement for the degree of Master of Science in Nursing, Branch II – Child Health Nursing, under my guidance and supervision during the academic year 2015-16.

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Internal Examiner **External Examiner**

ACKNOWLEDGEMENT

My most heartfelt gratitude to our **Beloved SRI SAKTHI AMMA**, for his abundant grace, love, compassion and immense showers of blessing, which gave me the strength and courage throughout the completion of this study.

I am grateful to our Managing Director **Dr. N. Balaji, Ph.D., MACE., FIMSA., FACSc., MBA.,** SNHRC and SNCON, who gave opportunity to conduct the study.

I express my deepest and heartfelt thanks to **Prof. Mrs. Lalitha Purushothaman. M.Sc (N), M.Phil.,** Administrative cum liaison officer, SNCON, who has given me the support and being my role model throughout these years.

Its my great privilege to express sincere thanks to principal **Prof. Mrs. Sujatha.V., M.Sc (N)** Principal of SNCON & HOD of Community Health Nursing Department, SNCON, for her encouragement and support throughout my study.

I extend my whole hearted thanks to enthusiastic personality who is my research Guide **Prof. Mrs. Dhanalakshmi.N., M.Sc (N).,** HOD of Child Health Nursing, SNCON for her encouragement, nobility, motivation, invaluable suggestions and excellent guidance which enlightened my path to complete the work systematically and helped me to complete my dissertation.

I extend my thanks to **Prof. Mr. S. Muthurathinam, M.Sc.,** Biostatistics, SNCON for his assistance in statistical analysis and presentation of data.

Its my privilege to express gratitude specially all teaching, non-teaching and library staff of SNCON for their significant contribution to this study.

I would like to thank **Dr.Anbarasi., MBBS.,** Medical officer, Lakshmipuram Health Center, Vellore, for giving me the permission to conduct study.

I extend my deepest thanks to all **Lakshmipuram urban area children of primary care givers,** who are participated in the study, for their valuable participation and support to this dissertation to bring out my dissertation.

My deepest gratitude goes to my parents, **Mr.Varadharaj, Mrs.Rajeshwari,** my husband **Mr.Senthil,** and my beloved sister **Mrs. Nalini** and uncle **Mr. Santhosh kumar** for their love and unconditional support throughout my life and my studies.

Finally I wish to thank one and all who are directly or indirectly responsible for the successful completion of my dissertation.

SARITHA.V

TABLE OF CONTENTS

CHAPTER NO.	CONTENTS	PAGE NO.
I	**INTRODUCTION**	1
	• Need for the study	4
	• Statement of the problem	8
	• Objectives of the study	8
	• Operational definitions	8
	• Research hypotheses	11
	• Limitations	11
	• Conceptual Framework	12
II	**REVIEW OF LITERATURE**	14
III	**RESEARCH METHODOLOGY** • Research approach	27
	• Research design	27
	• Setting of the study	28
	• Population of the study	28
	• Sample technique	28
	• Sample size	28

	• Criteria for sample selection	29
	• Variables	29
	• Description of the instrument	29
	• Validity and Reliability	32
	• Pilot study	32
	• Data collection procedure	33
	• Data analysis plan	34
IV	**DATA ANALYSIS AND INTERPRETATION**	37
V	**RESULT AND DISCUSSION**	51
VI	**SUMMARY AND RECOMMENDATIONS** • Summary	62
	• Nursing implications	67
	• Recommendations	68
	• Conclusion	69
	REFERENCES	71

LIST OF TABLES

TABLE NO.	TITLE	PAGE NO.
1.	Frequency and percentage distribution of demographic variables of children and parents.	38
2.	Frequency and percentage distribution of clinical profile of children with nocturnal enuresis.	41
3.	Frequency and percentage distribution of school related contributing factors among children with nocturnal enuresis.	43
4.	Frequency and percentage distribution of home related contributing factors among children with nocturnal enuresis.	44
5.	Comparison of pre and post assessment mean levels on nocturnal enuresis among children of primary care givers.	47
6.	Association between the post assessment scores of children nocturnal enuresis and the selected demographic variables .	48

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE NO.
1	Conceptual framework	13
2	Schematic representation of methodology	36
3	Cone graph showing percentage distribution of children according to pre and post assessment of nocturnal enuresis.	45
4	Cylinder graph showing percentage distribution of children according to pre and post assessment of nocturnal enuresis related factors.	46

LIST OF APPENDICES

APPENDIX	TITTLE	PAGE NO.
A	Letter granting permission to conduct main study	I
B	Certificate of validation	II
C	Letter requesting participation in the study	III
D	List of experts for tool validation	IV
E	Certification of English editing	V
F	Certification of Tamil editing	VI
G	Data collection instrument –English **Section A-** Part I - Demographic variables Part II- Clinical profile Part III- Contributing factors of nocturnal enuresis related to school Part IV- Contributing factors of nocturnal enuresis related to home. **Section B** Part I - Nocturnal enuresis rating scale Part II - Nocturnal enuresis related factors rating scale. 1.Behavioral modification therapy plan 2.Bladder diary 3. Star chart	VII

APPENDIX	TITTLE	PAGE NO.
H	Data collection instrument – Tamil **Section A** Part I - Demographic variables Part II- Clinical profile Part III- Contributing factors of nocturnal enuresis related to school Part IV- Contributing factors of nocturnal enuresis related to school **Section B** Part I - Nocturnal enuresis rating scale. Part II - Nocturnal enuresis related factors rating scale.	VIII

ABBREVATIONS

APA	American Psychiatric Association
ICCS	International Children's Continence Society
NE	Nocturnal Enuresis
PAU	Pediatric Association Of Urology
PNE	Primary Nocturnal Enuresis
SNE	Secondary Nocturnal Enuresis
UN	United Nation
UNICEF	United Nation International Children Education Fund
WHO	World Health Organization

ABSTRACT

Childhood holds a very important place in the life of every human being. Children can have emotional and behavioral problems that are real and painful. The behavioral problems seen in middle childhood are stuttering, pica, sleep problems, enuresis, encopresis and tics.

STATEMENT

An experimental study to assess the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore.

OBJECTIVES

1. To assess the levels of nocturnal enuresis among children of primary care givers .

2. To evaluate the effectiveness of behavioral modification therapy on nocturnal Enuresis among children of primary care givers .

3. To find out association between the post assessment scores of nocturnal enuresis and the selected demographic variables.

METHODS

The research design selected was Pre Experimental, one group pre and post test design. Judgemental sampling Technique was adopted to selected 35 children of primary care givers. Descriptive and inferential statistics were used for analysis and interpretation of data.

RESULTS

- Least number of children 3(9%) had mild levels of nocturnal enuresis, 7 (20%) had moderate levels of nocturnal enuresis, more than one quarter of the children 10(28%) had severe levels of nocturnal enuresis, nearly half of the children 15(43%) had profound levels of nocturnal enuresis during pre assessment, whereas after behavioral modification therapy, nearly half of the children 14(40%) had mild levels of nocturnal enuresis, less than half of the children 12(34%) had moderate levels of nocturnal enuresis, less than one quarter 7(20%) children had severe levels of nocturnal enuresis and least number of children 2(6%) had profound levels of nocturnal enuresis.
- Less than one quarter of the children 4(12%) had mild levels of nocturnal enuresis, more than half of the children 19 (54%) had moderate levels of nocturnal enuresis, less than half of the children 10(28%) had severe levels of nocturnal enuresis during pre-test. After behavioral modification therapy, majority of the children 27(77%) had mild levels of nocturnal enuresis, below the one quarter of the children 8(23%) had moderate levels of nocturnal enuresis, none had severe levels of nocturnal enuresis.
- The post assessment findings revealed that there was a significant difference at ($p<0.001$) in the mean difference score of pre and post assessment on effectiveness of behavioral modification therapy. There was an improvement in levels of nocturnal enuresis scores among children after behavior modification therapy, hence hypothesis 1 was accepted.
- There was a significant association ($p<0.05$) between the post assessment scores of nocturnal enuresis and the selected demographic variables such as age of the child, sex of the child and past history of enuresis in siblings.

The above result indicate that the behavioral modification therapy had a significant effect in reducing the levels of nocturnal enuresis among children.

CONCLUSION

From the study findings, it can be concluded that the behavioral modification therapy was effective in improving the levels of nocturnal enuresis among children.

Key words:

Effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers.

CHAPTER-I

INTRODUCTION

"The best inheritance a parent can give to his children is a few minutes of their time each day".

M Grundler

Childhood holds a very important place in the life of every human being. Census of 2014 showed that 25% of population of India comprises of children in the age group of 5-14 yrs. Primary school age is a dynamic period of physical growth and development. Children can have emotional and behavioural problems that are real and painful. The rate of behavioural and emotional disorders of children between 4-14yrs in the world has been reported to be between 7-20%. The behavioural problems seen in middle childhood are stuttering, pica, sleep problems, enuresis, encopresis, and tics. Enuresis is one of the common disorders among these. Enuresis is defined in the DSM-IV-TR as the repeated voiding of urine into the bed or clothes at least twice per week for at least three consecutive months in a child who is at least 5 years of age (Indian Association of Psychiatry, 2014).

Bedwetting is a prevalent and potentially distressing experience for children and their parents. Around 15–22% of boys and 7–15% of girls wet the bed at 7 years of age, with almost 3% wetting more than twice a week (Butler, 2012).

World Health Organization (2015) states that nocturnal enuresis in children is having a significant impact upon them. This childhood nocturnal enuresis is affecting up

to 15-20% of young children. Many studies have proved that this has significant impact upon a child's developmental and interpersonal relationships. This is actually one of the commonest developmental and urological problems among children. It is estimated that there are around 80-110 million children with enuresis in the world.

UNICEF (2013) estimates that 1 in 9 children aged 5 to 14 years are affected with non-organic enuresis (15%). There is a higher rate among children in urban areas (50%) than in non-organic enuresis (6%).

The American Psychiatric Association (2014) defines bed-wetters as children older than age five who are incontinent of urine at night. The prevalence of nocturnal enuresis has been difficult to estimate because of variations in its definition and in social standards. It is now generally accepted that 15 to 20 percent of children will have some degree of nighttime wetting at five years of age, with a spontaneous resolution rate of approximately 15 percent per year. Therefore, at 15 years of age only 1 to 2 percent of teenagers will still wet the bed.

About 85% of children will have complete diurnal and nocturnal control by five years of age. The remaining 15% gained continence approximately after 5 years of age. By adolescence 0.5 to 1%, children continue to have enuresis. The prevalence of nocturnal enuresis is three fold of daytime wetting, with rates of 6.7% in younger children and 2.8% in older children (Pediatric association of Urology, 2014).

The International Children's Continence Society (ICCS) defines enuresis as in-continence in discrete episodes while asleep. Enuresis (or nocturnal incontinence) is a symptom and a condition. The ICCS has grouped enuresis into two major classes. Enuresis in children without any other LUT (Lower urinary tract) symptoms (nocturia

excluded) and without a history of bladder dys-function is classified as mono symptomatic enuresis while children with enuresis with lower urinary tract symptoms are graded as non- mono symptomatic enuresis (ICCS, 2013).

Kimberly clark (2011) stated that punishing or shaming a child for bedwetting will frequently make the situation worse. This can cause increased bedwetting incidents, leading to more punishment and shaming. In the United States, about 25% of enuretic children are punished for wetting the bed. In Hong Kong, 57% of enuretic children are punished for wetting. Parents with only a grade-school level education punish bedwetting children at twice the rate of high-school- and college-educated parents.

Naseri M (2013) has cited that the risk of child being affected was 43% if one parent had nocturnal enuresis and 77% if both parents were affected. Approximately 75% of children with nocturnal enuresis have a first degree relative who had enuresis and 23% of nocturnal enuresis is associated with encopresis and day time incontinence.

Nocturnal enuresis is approximately found in 1% of teenagers at 15 years of age still wetting the bed. Parents and caregivers usually get worried about nocturnal enuresis when their child reaches 5 to 6 years of age. This age is important since it is the year of school entry. Most children are not concerned until 7 to 8 years of age. (J.M.Chinawa, 2012).

Bedwetting is common for children, affecting more boys than girls. The condition occurs in 30% of children at the age of 4, 10% at the age of 6, and drops to 1% by the age of 18. Although children develop bladder control at different rates, most boys can control their bladder during the day and night by the age of 6 and most girls by the age of 5. When a child who is old enough to have bladder control urinates accidentally while

sleeping, parents and family members are frequently stressed by a child's bedwetting. Soiled linens and clothing cause additional laundry. Wetting episodes can cause lost sleep if the child wakes and/or cries, waking the parents. A study estimated that a family with a child who wets nightly will pay about $1,000 a year for additional laundry, extra sheets, disposable absorbent garments such as diapers, and mattress replacement (Abdul Karim Alobaidi, 2015).

NEED FOR THE STUDY:

Babyhood is often referred to as a critical period in the development of personality. The adult personality structure will be built upon this time where the foundations are laid. There are many developmental tasks to be achieved during this period. Among them toilet training is the most important task to be attained by each child. Bed-wetting or nocturnal enuresis is involuntary urination while asleep. Bladder control is expected to be around five years of age. Until 5 years of age, bed-wetting is common and we can say that often it is a developmental stage (Alenka koren, 2014) .

Azhira (2011) conducted a study to estimate the prevalence of nocturnal enuresis and to determine the factors associated with this disorder in primary school children at Iran. A study was conducted in 4500 parents of children aged between 6-12 years attending primary schools. From an overall response rate of 69.9% enuresis was reported in 7%, comprising 6.2% of nocturnal enuresis, 3.3% of diurnal enuresis and 0.8% 0f combined day and night wetting. A positive family history in father and mother was seen in 51% of cases. The study conducted that age, gender and the educational level of the mother, the main risk factors of enuresis and the prevalence of primary nocturnal enuresis appears to be significantly related to positive history of enuresis in father.

Enuresis is an issue that millions of families face every night. It is extremely common among kids who are under the age of six, and it can last upto the pre-teen years. Nocturnal enuresis is the involuntary wetting during sleep without any inherent suggestion of frequency of bedwetting or pathology. At age 4½, 30% of children still wet the bed, 21% infrequently (less than 2 times per week) and 8% of these more frequently. Children with more frequent wet nights are more likely to have a persistent problem and benefit from early identification and investigation. About 15% of 6-year-olds wet the bed, about 5% of 10-year-olds wet the bed. Most girls can stay dry by age six and most boys stay dry by age seven. By ten years old, 95% of children are dry at night. Studies place adult bedwetting rates at between 0.5% to 2.3% (Virginia A, 2011).

About 75% of enuretic have first degree relatives with history of enuresis and most commonly occurring factor is psychosocial, emotional disturbances, insecurity, sibling rivalry and death of parents. Encopresis is 3 to 4 fold more common in males than female. By the age of 5 years, 1-1.5% of children are encopretic, it tends to increase spontaneously with increasing age, and by the age of 10 there are no encopretics but 25% of these patients have associated enuresis. (Niraj Ahuja , 2013).

Benjamin J (2012**)** has cited a Behavior modification and treatment choice for enuresis. Behavior modification is inexpensive and has a success rate of about 75%. The child's bedding includes a special pad with a sensor that rings a bell when the pad becomes wet. The bell wakes the child, who then gets up and goes to the bathroom to finish emptying his bladder. Over time, the child becomes conditioned to waking up when the bladder feels full. Once this response is learned, some children continue to wake themselves help from without the alarm, while others are able to sleep all night and

remain dry. A less expensive behavioural technique involves setting an alarm clock to wake the child every night after a few hours of sleep, until the child learns to wake up spontaneously. In trials, this method was as effective as the pad-and-alarm system.

Boggs (2012) conducted a study to assess the effectiveness of behavioral modification treatment of nocturnal enuresis among children in Brazil. A total sample size of 600 children was selected with ages between 7-9years and reports that the children tend to outgrow bed wetting with a spontaneous remission rate of about 14% annually among the 3%, remaining enuretic as adults. Bedwetting is more common in boys.

Manyika (2012) conducted a study to assess the nocturnal enuresis behavior among school – age children in south-eastern Nigerian. A total sample size of 245 pupils was selected with age between 6 and 12 years. The stratified method of sampling was employed to get a sample that represents the population. The prevalence of enuresis was noted to be 22.8%. The prevalence is higher in males (60%) than 39% in females (P value>0.05) with higher incidence in lower socio economic back ground and children with positive family history of bed wetting in the first degree relative though not significant.

Rafsanjan (2014) conducted a study to assess the prevalence of enuresis among school age children in Iran. A total sample size of 1080 school children aged between 6-8 were selected using a random cluster sampling method. Questionnaires were distributed among the children to be answered by their parents. The overall prevalence of nocturnal enuresis was 10.6% (CI 95%: 8.76 – 12.44); 91.3 % of them had primary and 8.7% had secondary nocturnal enuresis. Prevalence in girls and boys were 8.44% and 12.3% respectively. Factors such as parental education, family income, and age were significantly associated with nocturnal enuresis.

Hashem Mahmood Zadeh (2013) conducted a study for detection of nocturnal enuresis prevalence rate and evaluation of associated familial and personal factors in elementary school children at Urmia. A total sample size of 1600 children were selected with ages between 6-12 years. Among the 1600 questionnaires distributed, 918 (57%) were completed and included in the final analysis. The rest, which were not filled by parents and also those out of our study age range, were excluded. Gender of the subjects was almost equally distributed (48.6% males and 51.4% females). Prevalence of nocturnal enuresis was 18.7% (n = 172) and prevalence of day time incontinence was 5.5% (n=51). There was no significant gender difference between these two groups.

Bhakta P (2013) conducted a study to assess the enuresis and encopresis among children in south Indian population of Kerala. A total sample size of 1403 parents, who have 8-12-year-old children were randomly selected. Rutter's A2 scale (psychiatric, physical and psychometric evaluations) was used. Of the children, 18.6% had an episode of enuresis in the past year and 4.3% in the past week. Four per cent had an episode of encopresis in the past year. The studies revealed the importance of neuro-developmental factors in enuresis and encopresis in this age group.

As researcher herself had a personal first hand experience of nocturnal enuresis in her cousin's child, researcher has seen the difficulties faced by the children and parents in managing the problems, especially due to their lack of knowledge in managing nocturnal enuresis. So, if the mothers are having adequate knowledge, they would be able to practice behavioral modification therapy effectively and thus can manage their children's problem of enuresis effectively. The researcher observed behavioral problems in child as the child started to isolate herself. So the researcher was interested to a

solution for enuresis among children. The researcher felt the need for testing, the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary caregivers (6-12years) at selected urban area,Vellore.

STATEMENT OF THE PROBLEM:

An experimental study to assess the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore.

OBJECTIVES :

1. To assess the levels of nocturnal enuresis among children of primary care givers .
2. To evaluate the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers .
3. To find out association between the post test scores of nocturnal enuresis and the selected demographic variables.

OPERATIONAL DEFINITIONS:

Effectiveness:

In this study, it refers to the outcome of behavioral modification therapy in changing the Enuresis behavior of children as elicited by the difference in the mean of the pre and post test scores obtained using, nocturnal enuresis related factors rating scale .

Behavioral modification therapy:

This is the intervention done by the researcher to modify the enuretic pattern using following approaches,

1.Night lifting:

- Taking the child to the toilet during the night usually before the time that bedwetting is expected, without necessarily waking the child.

2. Waking with alarm:

- Child should not be given liquids after 5 clock in evening and asked to urinate before going to sleep. Child should be fully aroused after 2 to 3 hours of sleep and walk unaided to the toilet to urinate.

3. Stop- start- training:

- Teaching children to interrupt their stream of urine in order to strengthen their pelvic floor muscles.
- Hold urine as long as possible during the day.
- Repeated practice of starting and stopping the stream of urine at the toilet bowl.
- Practice getting up from bed and going to bathroom at bed time before sleep.

4. Good bladder health recommendation:

- Children should be counseled to void regularly to prevent urgency incontinence.
- Avoid high sugar and caffeine based drinks for children with nocturnal enuresis.
- Children drinks 40 percent of their total daily fluids in the morning ($7^{Am\ to\ 5\ Pm}$) and only 20 percent in the evening (after 5pm). Ample

consumption of fluid in morning and afternoon reduces the need for significant intake later in the day.

- The child should attempt to void regularly during the day and just before going to bed. (A total of 4 to 7 time).

5. Good bowel health recommendation:

- A high-fiber diet with plenty of fluids. This means loading your child's plate with plenty of fresh fruits and vegetables, high-fiber cereals, whole grain breads (look for at least 3-5 grams of fiber per serving), and a variety of beans and other legumes.
- Encourage your child to use the toilet in the morning.

6. Retention control training:

- Retention control training was initiated for children with reduced functional bladder capacity. The child drinks fluids and delays urination as long as they can tolerate in order to stretch the bladder to accommodate increasingly large volume of urine. Along with this, children practice pelvic exercise.

7. Reinforcement therapy:

- Reward system should serve as a positive reinforcement to the child for achieving dry nights. The rewards can be candy or stationary things like scale, pencil, rubber according to the child for achieving dry nights.

Nocturnal enuresis:

In this study children having bed wetting episodes for, at least twice a week for a period of 3 months.

Primary care givers:

Individuals living in the same house hold with the child, mainly the parents or guardian who are involved directly in bringing up the child.

Children:

The children in the age group of 6 to 12 years, having nocturnal enuresis.

Delimitations:

The study is limited to

- Children aged between 6 to 12 years
- Children residing in selected urban area during the data collection.
- Children without mental disorder.

Hypotheses:

- H_1 There is a significant difference between the pre and posttest scores of nocturnal enuresis behavior among children.
- H_2 There is a significant association between the post test nocturnal enuresis scores among children and their selected demographic variables.

CONCEPTUAL FRAME WORK

GENERAL SYSTEM'S THEORY

General system theory serves as a model for viewing people as interacting with the environment. This theory was developed by Ludwig Von Bertalanffy (1968). The frame work for this study was based upon General System's Theory. The General System's Theory is concerned with changes due to interaction with all the factors (variables) in a situation. A system is defined as a whole with interrelated parts in which the parts have a function and the system as a totality which has a function. Change in any part affects the whole system.

In the General System's Theory, the main concepts are input, throughput and output. Input and output are the process by which a system is able to communicate and react with its environment. Input can be defined as any form of information or material that is transferred to the environment. Throughput is a process that occurs at some point between input and output process.

In this study, the **Input** process includes behavioral modification therapy on nocturnal enuresis. It includes night lifting, waking with alarm, stop-start- training, good bladder health recommendation, good bowel health recommendation, retention control training and reinforcement therapy.

Throughput process includes the influence of transformation of information on levels of nocturnal enuresis. The primary care givers regularly practice of behavioral modification therapy to the children by restricting fluid intake, waking their children during sleep to urinate, using alarm and providing more fiber rich food to the children.

The **output** is a prediction that there may be a change in the levels of nocturnal enuresis. It was assessed by using bladder diary and star chart.

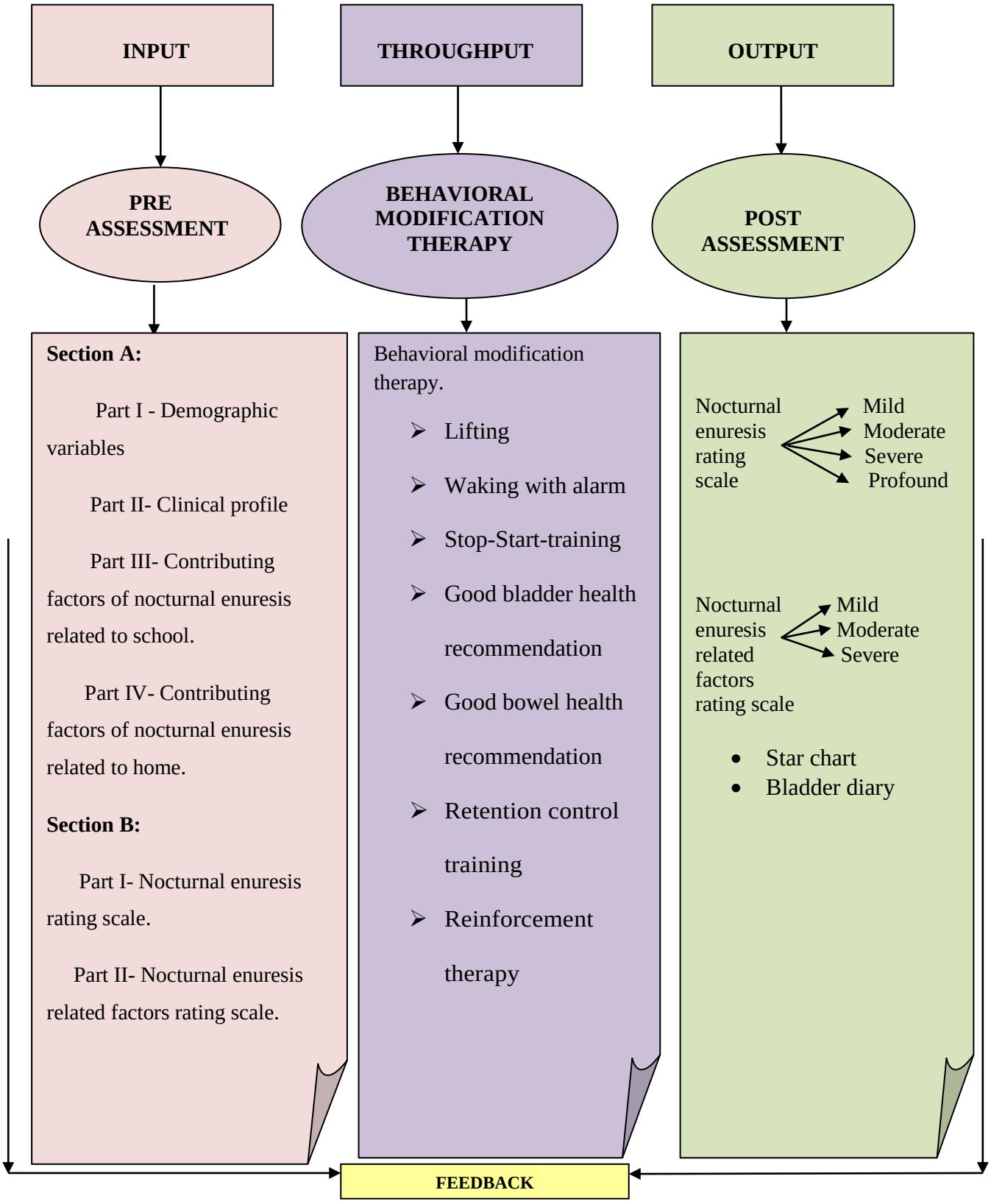

Figure: 1 General system model – LUDWIG VON BERTALANFFY (1968)

CHAPTER-II

REVIEW OF LITERATURE

A literature review is a body of text that aims to review the critical points of knowledge on a particular topic of research..

(ANA-2000).

Review of literature in this study is arranged under the following sections:-

SECTION A: Studies related to the prevalence of nocturnal enuresis in children.

SECTION B: Studies related to the effectiveness of behaviour modification therapy in controlling the nocturnal enuresis in children.

Section A: Studies related to the prevalence of nocturnal enuresis in children.

Jian,Guo & Wen (2010) conducted a cross sectional study to assess the prevalence of primary nocturnal enuresis (PNE) and its risk factors in Chinese children and adolescents in the central areas of mainland China. PNE was performed by distributing 11,799 self-administered questionnaire to parents of 5-18 year old students in 32 schools of Henan province China. The prevalence decreased with age without gender bias, of all enuretic children, 21.17% had daytime urinary symptoms and 22.87% had a positive family history. Only 6.08% of PNE had sought professional help. The episodic severity of PNE, associated daytime symptoms, positive family history, and seeking for professional help in adolescent group were significantly higher than those of pediatric group. Age, inhabitation (living in rural or urban areas), arousal dysfunction, associated

daytime symptoms and family history were found to be significant predictors of marked PNE. Among PNE cases with a positive family history, there was no significant difference in the familial distribution between boys and girls.

Avinash (2010) conducted a descriptive study to assess the prevalence of enuresis and to determine contributing factors along with treatment methods used in school children in Mumbai. The parents of 1,473 children aged between 6-10 years completed a self-administered semi-structured questionnaire. Socio-demographic profiles, enuresis data, medical, psychiatric disorders and family stressors were collected. The data was analyzed and the results presented. The overall prevalence of enuresis was 7.61%. Enuresis was more common in boys. A positive family history of enuresis was seen in 28.57% children; 14.29% of the children had daytime wetting as well. Only 24.11% of the parents had taken their child to a doctor for the problem. Family stressors, significant birth history and lower socio-economic status was present to a larger extent in the enuretic group. Scholastic backwardness was also an important factor in this group. This study reports on the prevalence of enuresis in school-going children and stresses on the need for parental education and awareness about this problem.

Cuneyt (2011) conducted a study to assess the prevalence and associated factors of enuresis among children, in the age group of 6 to 12 years in Turkey. A total sample size of 300 children were selected. The overall prevalence of nocturnal and diurnal enuresis were 17.5% (n=234) and 1.9% (n=25), respectively. Although male gender, low age, history of enuresis among parents, low educational level of the parents, deep sleep, increased number of siblings, increased number of people sleeping in the child's room, history of enuresis among siblings, poor school performance and history of recurrent

urinary tract infections (UTI) were significantly associated with enuresis, but there was no association with severe enuresis. The percentage of children with enuresis seen by physician for treatment were 17.2%. The most preferred treatment option for enuresis was medications (59.5%), whereas alarm treatment was the least preferred (2.4%) for children by care givers.

Cher, Lin & Hsu (2011) conducted a cross-sectional study to assess the nocturnal enuresis among 10 primary school children in Tao-Yuan County, Taiwan. Questionnaire on demographic data, familial and physical conditions were completed by 7,225 children assisted by their parents. The overall prevalence of nocturnal enuresis in Taiwanese primary school children was 5.5%. Decreasing age, male gender, family size, birth rank, parental education level and parental raising style were possible familial risk factors for nocturnal enuresis in this study.

Jarvelin & Huttune (2012) conducted a study to assess the prevalence of enuresis and associated somatic and genetic risk factors among school children in South Africa. A total sample size of 50 primary school children was selected. The overall prevalence of enuresis was 9.8% and the figures for nightwetting, day wetting and mixed day and night wetting 6.4%, 1.8% and 1.6% respectively. The prevalence was 9.5% among primary school children, 24.8% among children whose entry to school had been postponed and 26.6% among handicapped and mentally retarded children.

Chu Tinah (2013) conducted a cross sectional study to assess the prevalence and of nocturnal, diurnal and combined enuresis in elementary school children in each urban ward in Pusan, Korea. The parents of these 12,570 children aged 7 – 12 years were asked to complete a questionnaire. The overall response rate of the questionnaire was 55.8%

(girls 28.2%, boys 27.6%). The prevalence of nocturnal, diurnal and combined enuresis was 9.2%, 2.2% and 1.4% respectively. The overall prevalence of enuresis defined with age from 20.4% at 7 year old to 5.6% at 12 years old; 342 (57%) parents and 318 (55.6%) children were concerned about enuresis. The common self-help strategies were waking the child at night to void (38.1%) and restriction of water intake (25.7%) of the enuretic children, and only 13.7% consulted a health workers. Enuretic children and their parents were moderately concerned about enuresis and the parents primarily used self-management within the family.

Yeung CK (2013) conducted a study on prevalence of Nocturnal enuresis among school children in Hong Kong. A total sample size of 105 children was selected with age between 6 to12 years. The prevalence was found that 19% of boys and 14% of girls met with bed-wetting episodes. The results showed that bedwetting embarrassed the enuretic children as they avoided talking about bedwetting problem (89.5%), avoided sleeping out (25.7%) and denied having wetting episodes (18.1%). The majority of parents (86%) thought that PNE was abnormal and was caused by renal, psychological, or brain problems. Parents felt troublesome (71.4%), angry (19%), and ashamed (11.4%) of their children. Although 77% of the parents praised their children for being dry, 57% still punished their children for enuretic episodes.

Wekke SJ (2014) conducted a study to assess the prevalence of nocturnal enuresis among 1,882 pupils of 15 primary schools in a rural area of the Netherlands. The investigation coincided with the periodical medical examination for which all pupils of these groups were invited and for which over 99% reported. In addition to this, a study was conducted about the effect of dry bed training, as a part of youth health care, in 36

children with nocturnal enuresis. Of the children examined, 8% wet their beds at least once a week, boys twice as often as girls. Nocturnal enuresis often caused emotional stress in children and parents. The success rate of the dry bed training was 86%. Most children were dry within two months; 32% had a--frequently transient--relapse. After six months, 75% of the children who had dry bed training remained dry at night. Group dry bed training appears a suitable method for children with nocturnal enuresis from age 8 when other methods (including the pad and buzzer) are unsuccessful. The training is feasible outside hospital and is an appropriate part of the tasks of youth health care.

Azhir A (2014) conducted a study to assess the prevalence of enuresis and to determine the factors associated with enuresis among 4,500 parents of children aged between 6-12 years attending 30 primary schools in Iran. These parents were distributed with self administered questionnaire. The overall response rate was 69.9% among which enuresis was reported in 7%, comprising 6.2% of nocturnal enuresis, 3.3% for diurnal enuresis and 0.8% for combined day and night wetting. A positive family history in father and mother was seen in 51% of cases. The study concluded that the age, gender and educational level of mother are the main risks determinant of enuresis.

Scott Orme (2014) conducted a study to assess the prevalence of bedwetting in children aged 6-10 years of age and to investigate parental knowledge and attitudes toward children who suffer from nocturnal enuresis in Kindergarten, 1st Grade and 4th Grade students in a large school district at northwestern Wisconsin (United States). Research indicated that most children achieve normal continence by the age of five to six years. Research also indicated that enuresis is prevalent in 7% to 20% of males and 3 % of females ranging from ages 5 to 7 years of age. At age 10, the prevalence is 3% in

males and 2% in females. Typically by the age of 15, most children have outgrown bedwetting. In most cases the cause of bed-wetting is unknown. Parental attitude toward bedwetting was found to be very supportive. Although parental knowledge of the cause of bed-wetting was limited, their reaction to it was positive and supportive.

Iduoriyemwen NJ (2014) conducted a study to ascertain the true prevalence of the enuresis and contribution of some organic causative factors in Benin City; Nigeria, in November-December in which a survey of enuresis carried out among 300 apparently healthy children aged between 5-10 years in a systematically selected area. The overall prevalence of enuresis was 21.3% out of which 91% had only nocturnal enuresis and 9% cases had day and night time enuresis, 94% of cases of enuresis were primary while only 6% were secondary. There was a strong relation between enuresis and family history of bedwetting. Some other associated factors were poor economic status, poor education level of parents, first order births.

Hazza I (2015) conducted a study on prevalence of primary nocturnal enuresis in children and to find out the factors associated with primary nocturnal enuresis in Jordan. The total sample size of 950 parents of school children aged between 6-8 years was selected. randomly from three primary schools. The response rate was 71.6% and prevalence of primary nocturnal enuresis was 23.8%, family history of enuresis was present in 50.5% of cases, while low socio economic was found in 67.3. 50% of parents sought medical help and 75% of the children received drug therapy. At least 14% of parents reacted with anger and punished their children at some time or the other.

SECTION B: Studies related to the effectiveness of behavior modification therapy in controlling the nocturnal enuresis in children.

Rodrigo (2010) conducted a study to assess the efficacy of alarm treatment among enuretic children in Brazilian. A total sample size of 100 children was selected with age between 6-12years. The children received an alarm treatment for a duration of 32 weeks 84 children and adolescents received alarm treatment together with weekly psychological support sessions for individual families or groups of 5 to 10 families. 71% of the participants achieved success, defined as 14 consecutive dry nights. The result was similar for children and adolescents and for individual or group support. The time until success was shorter for participants missing fewer support sessions. Alarm treatment was effective for the present sample, regardless of age or type of support. Missing a higher number of support sessions, which may reflect low motivation for treatment, increased the risk of failure.

Magdi (2010) conducted a cross-sectional study to assess the treatment modalities of nocturnal enuresis among children attending primary school, aged from 5 to 14 years old in North Africa at Khartoum. The total sample size of 280 children from 7 different schools and sending questionnaire to home along with the consent form to their parents. 218 questionnaires related to treatment of nocturnal enuresis. The responding rate of 77.8% and were Considered valid for statistical significance. Regarding treatment modalities used for stopping the bedwetting, it was shown that 32.2% of the parents force their children to go to the bathroom before going to bed. 22.3% prevent them from

drinking lots of liquids before going to bed .25.7% wake their children up at night to go to the bathroom.

Lillystone, D & Caldwell, P.H, (2011) conducted a study to assess the efficacy of bell and pad alarm therapy as an initial and relapse treatment for nocturnal enuresis and to explore risk factors for relapse within 12 months of successful bell and pad alarm therapy in schoolers in Germany, Berlin. A total sample size of 240 children was selected. A 22-item questionnaire was sent to 240 children who received bell and pad alarm therapy in a 6-week period via a community centre. The questionnaire recorded demographic characteristics of the child, length of the first bell and pad alarm therapy, outcome of initial treatment and relapse information. The initial response and relapse rates of bell and pad alarm therapy were 84 and 30%, respectively. Female gender, absence of diurnal symptoms and willingness to use alarm therapy were associated with better treatment outcomes. Treatment success was associated with shorter treatment length. The success rate of repeating alarm therapy after relapse was 78%, with an average length of treatment of 10 weeks.

Dommelen, & Leerdam JM (2011) conducted a study on randomized controlled trail on the short term and long term of simple behavior intervention for nocturnal enuresis in young children was conducted in Netherlands. Nocturnal enuresis occurs in up to 10% of 10-year-old children and that boys had higher rates of enuresis at older ages than do girls. Behavioural treatments for enuresis, including alarms, can be used beginning at 5 to 7 years of age. Success rates (at least 14 nights dry in a row) at 6 months after enrollment were 21% in the control group, 27% in the lifting with experimental group, 37% in the lifting without experimental group, and 32% in the star

chart/reward group. The difference between the lifting without experimental group (37%) and the control group (21%) was the only statistically significant difference. At follow-up obtained from,64% of participants. At a mean follow-up time of 2.6 years, the success rates were,69% for the control group and 76% to 78% for the other groups; these differences were not statistically significant.

Glazener (2012) conducted a randomised contol trial on behavioral modification therapy on nocturnal enuresis among children up to the age of 5 to 12years in primary schools at Italy. A total sample size of 702 children was selected. 387 children received a simple behavioral intervention. However, within each comparison each outcome was addressed by single trials only, precluding meta-analysis. In singe small trials, reward system (e.g. star charts), lifting and waking were each associated with significantly fewer wet nights, higher cure rates and lower relapse rates compared to controls. One small trial of poor quality suggested that star charts were initially less successful than amitriptyline but this difference did not persist after the treatments stopped. Simple behavioural methods may be effective for some children, but further trials are needed, However, simple methods could be tried as first line therapy before considering alarms or drugs, because these alternative treatments may be more demanding and may have adverse effects. A different behavioral therapy of variance revealed that the difference in improvement between the combined behavioral modification therapy on nocturnal enuresis among children was significant at $p(< 0.05)$ level.

Rodrigo F (2012) conducted a study to assess the efficacy of alarm treatment in a sample of Brazilian children and adolescents with nocturnal enuresis and relate treatment success to age and type of clinical support. During 32 weeks, 84 children and adolescents

received alarm treatment together with weekly psychological support sessions for individual families or groups of 5 to 10 families. 71% of the participants achieved success, defined as 14 consecutive dry nights. The result was similar for children and adolescents and for individual or group support. The time until success was shorter for participants missing fewer support sessions. Alarm treatment was effective for the present sample, regardless of age or type of support. Missing a higher number of support sessions, which may reflect low motivation for treatment, increased the risk of failure.

GraceRattue (2012) conducted a study to assess the cause for bedwetting is often constipation, and not always bladder problems in South Africa. A total sample size of 30 children aged between 5 to 15 years old. The researchers found that although the majority had normal bowel habits, all 30 children has excess stool in their rectums. After laxative therapy, 83% (25 children) were cured of bedwetting within 3 months.

Bradbury M (2012) conducted a study to assess the efficacy of alarm monotherapy among 35 children with nocturnal enuresis was compared with the efficacy of alarm treatment in combination with 40 micrograms desmopressin nasal spray among 36 children in Jothpur,Delhi. At the end of the treatment period, children receiving combination therapy had more dry nights per week (mean: 6.1) than children using an alarm alone (mean: 4.8). In addition, more children achieved an initial success (4 weeks of dryness) following combination treatment (27 children [75%]) compared with alarm monotherapy (16 children [46%], $P < 0.005$). This improvement with alarm plus desmopressin was particularly pronounced in children with severe wetting (> or = 6 nights per week), family problems or behavioural problems. It may, therefore, be

appropriate to manage children in these categories with an enuresis alarm supplemented with desmopressin to improve treatment outcome.

Jessie F (2012) conducted a study to assess the incontinent among children with nocturnal enuresis (6to15years) in pune. A total sample size of One hundred thirty-three incontinent children were selected and assigned randomly to a 13-week behavior therapy program for urinary incontinence or to a control group that received usual incontinence-related care. The therapy became effective after 6 weeks of training. By the final month of training, the treatment children's wet episodes had been reduced by 0.6 episodes per day, a 26% reduction over baseline. This reduction in the number of wet episodes was statistically significant, both with respect to this group's baseline levels of incontinence and in comparison with the performance of the control women. The number of wet episodes in the control group remained about the same throughout training and the 22-week follow-up period. The treatment women improved partly because they learned to request help, a response prompted and reinforced by the program. Trainees with a high frequency of incontinence during baseline, the more cognitively intact residents, and residents with normal bladder capacity responded better to this behavior therapy program.

Harris (2013) conducted a randomized controlled trial to assess the effectiveness of Retention control training among children with bedwetting of 6 to 12 years in Nagaland. Retention control training was described as 5 nights in a camp, then 30 days with parents, on the first day the child was asked to drink fluid and the time to void was recorded as was the volume voided. After this ,children were encouraged to hold for longer, and were given 1 point for each extra 2 minutes held. The child was then taught that the longer they held the more urine they passed. Once the child understood this they

were given points based on the amount of urine passed. Points were exchanged for toys and games. After the intervention period, retention control was less common in the intervention than in the control subjects. The result showed retention control training was significant at ($p<0.05$) intervention was effective in reducing the nocturnal enuresis in experimental group than in control group.

Berhstrom A (2013) conducted a study to assess the self-esteem in children with nocturnal enuresis and daytime incontinence in the town of Umeå, Sweden. total sample size of 200 children were selected (6to12years). A Self-esteem was measured using a Swedish self-answering questionnaire that was known to have good psychometric properties. Statistically significant impairment of self-esteem was observed between experimental and control group children before starting treatment ($P < 0.001$). After 6 months treatment, the control group had the same levels of self-esteem. Self-esteem was significantly better in patients that were totally dry at 6 months follow up compared with the patients with persisting urinary problems ($P < 0.01$). Children from lower socioeconomic groups were found to have lower self-esteem than children from higher socioeconomic groups; boys were also found to have lower self-esteem than girls.

Egan & Voorhees (2014) conducted a study to assess the effectiveness of a comprehensive behavioural and educational nocturnal enuresis management program on children aged between 5-17 years in Sikkim. One hundred and fifty patients aged between 5-17 years with nocturnal enuresis, a minimum of 5 nights a week for two months, began the Center for Enuresis Control case management program from December 2013 to September 2014. The programme was a comprehensive, multidimensional treatment plan with consistent follow-up. The program included

enuresis education, motivational counseling, enuresis alarms, physical interventions, feedback, and bi-weekly report cards. Instructions were provided to the participants directly over the phone and with follow-up written material. Self-esteem was assessed using the Childhood Health Questionnaire (CHQ-PF28). One hundred fifty patients were started on the program, 104(90.4%) were declared dry (69.3% of patients were dry on an intent-to-treat basis). Responders to the program with a pre-intervention indication of impaired self-esteem experienced a 7.4% increase in self-esteem scores.

Pennesi (2014) conducted a study to assess the efficacy of behavioral therapy among children between 5 to 17 years old with primary enuresis problems in Kuwait. A total sample size of 250 children was selected, in that 159 boys and 91 girls of 5 to 17 years old with primary enuresis who were treated at 3 medical centers with a pediatric nephrology clinic during the last 3 years. A detailed voiding history was obtained. Each child was treated with a bladder training session, including an explanation of the enuretic process, daily diary recording and training to recognize bladder distention and increase voiding frequency. A total of 226 children (90%) presented with 1 or more symptoms of bladder maturation delay and 13% reported behavioral constipation. Of the patients 185 (74%) competed the proposed treatment, including 111 (60%) who reported a positive and 21 (11%) who reported a partial response. In 53 children (29%) the treatment failed. Most children with enuresis have daytime symptoms when an accurate history is recorded. As shown by our data, the efficacy of behavioral therapy is comparable to that of desmopressin or alarm therapy but it requires good compliance of the child with the therapeutic plan. Age is not a determining factor in the success rate.

Friman & Jones (2014) conducted a study on Kegel exercises involve purposeful manipulation of the muscles to prematurely terminate urination among children with nocturnal enuresis between 6 to 15 yrs in Goa. A total sample size of 400 was selected. The Originally developed for stress incontinence in women, a version of these exercises called stream interruption is often used in NE treatment packages (For children, stream interruption requires initiating and terminating urine flow at least once a day during a urinary episode. "Dry practice" or actual Kegel exercises can be practiced far more frequently once the child has learned to detect and manipulate the requisite musculature while conducting stream interruption. Dry contraction of pelvic musculature consists of the child "holding" a contraction for 5 to 10 seconds, followed by a 5- rest, at least 10 times.

CHAPTER-III

METHODOLOGY

This chapter describes the research approach, research design, and variables in the study, setting of the study, population, sample size, sampling techniques, criteria for sample selection, description of the tool, content validity, pilot study, reliability, data collection method and plan for analysis.

RESEARCH METHODOLOGY

Methodology refers to the techniques used to structure a study to gather and analyze information in a systematic fashion.

Polit and Hungler-2003

RESEARCH APPROACH

Research approach used for the study was quantitative research approach.

RESEARCH DESIGN

The research design used for the study was Pre Experimental ,one group pre and post test design.

The research design is represented as follows

O_1 X O_2

O_1- Pre test to assess the levels of nocturnal enuresis among children of primary care givers by using structured interview schedule.

X- Behavioral modification therapy

O_2- Post test to assess the levels of nocturnal enuresis among children of primary care givers by using structured interview schedule after behavioral modification therapy.

VARIABLES

Independent variable:

Behavioral modification therapy.

Dependent variable:

Levels of nocturnal enuresis among children.

SETTING OF THE STUDY

The study was conducted among children of primary care givers (6-12years), at Lakshmipuram, urban area situated at Velapadi which is 5 kilometers away from Vellore town. The Lakshmipuram, urban center covers 46,390 population. Children population between 6 months to 19 yrs in Lakshmipuram is estimated to the 11,602.

STUDY POPULATION

The target population includes primary care givers and children with nocturnal enuresis. The population for the study is children of primary care givers with nocturnal enuresis at selected urban area,Vellore. The accessible population is children (6-12 years) of primary care givers with nocturnal enuresis at Lakshmipuram, Vellore.

SAMPLE SIZE

The sample in the study includes children age between (6-12years), the sample consists of 35 primary care givers and children with nocturnal enuresis at Lakshmipuram urban area, Vellore.

SAMPLING TECHNIQUE

Judgmental sampling technique was adopted for this study which is done based on the inclusion and exclusion criteria. The inclusion criteria includes primary care givers and children with nocturnal enuresis and in the age group between 6 to 12 years.

The exclusion criteria includes primary care givers who are not willing to participate in this study and children who are undergoing treatment for nocturnal enuresis.

CRITERIA FOR SAMPLE SELECTION:

Inclusion criteria:

- Primary care givers and children with nocturnal enuresis.
- Children in the age between 6 to 12 years.

Exclusion criteria:

- Primary care givers who are not willing to participate in this study.
- Children who are undergoing treatment for nocturnal enuresis.

DESCRIPTION OF THE INSTRUMENT

The questionnaire was developed based on the literature and with the guidance of experts to assess the levels of nocturnal enuresis. Same questionnaire was used for pre and post-test.

SECTION-A

Part-I: Demographic variables.

It consists of selected demographic variables of the children with nocturnal enuresis such as sex, birth order of the child, no of siblings, income of the family, education levels of father, mother, and guardian, occupation of father, mother and guardian, parents are living together, history of enuresis in parents, history of enuresis in siblings.

Part-II: Clinical profile.

Clinical profile is comprised of clinical profile of the children with nocturnal enuresis such as history of UTI , pain during voiding, day time incontinence, day time urgency, age bladder training started, habit of bedwetting, bed wetting time at night, any consultation with physician for children with nocturnal enuresis.

Part-III: Contributing factors of nocturnal enuresis related to school.

Contributing factors associated with nocturnal enuresis such as, problem in studying, going to school is frightening, teacher has punished/scolded in front of others, fighting with friends in school, comfortable with school toilets, avoid school toilets.

Part-IV: Contributing factors of nocturnal enuresis related to home.

Contributing factors associated with nocturnal enuresis such as, frightening situation in family, being compelled for academic achievement, fear of toilet, having nightmare, fear of animals, having punished the for bed wetting, self- esteem is affected by bed wetting habit, feel bad about habit of bedwetting.

SECTION-B

Part-I: Nocturnal enuresis rating scale related to frequency of nocturnal enuresis:

It consists of one item related to frequency of nocturnal enuresis in children.

SCORE INTERPRETATION	FREQUENCY OF NOCTURNAL ENURESIS
Mild	2-3times per week x 3months
Moderate	4-5times per week x 3months
Severe	5-6times per week x 3months
Profound	> 6 times per week x 3months

Part-II: Nocturnal enuresis related factors rating scale.

It includes 4 items such as, sleep interrupted with bed wetting, wakes up but avoid going to toilet, drinking water frequently in the evening hours, complaints of constipation. All the items were scored as below. Each items scored least score of 0 and highest score 4. The maximum score was 16.

SCORE INTERPRETATION	SCORE
Nil	0
Rarely	1
Occasionally	2
Frequently	3
Always	4

Score interpretation for nocturnal enuresis behavior:

1-5- Mild nocturnal enuresis behavior

6-10 - Moderate nocturnal enuresis behavior

11-16- Severe nocturnal enuresis behavior

VALIDITY:

Validity is the most critical and indicates the degree to which an instrument measures what it is supposed to measure. **(Polit and Beck 2013).**

The content validity of the tool was obtained from experts in the field of Child Health Nursing and Bio-statistics. Questionaires with demographic variables(13) , Clinical profile (10), Contributing factors related to nocturnal enuresis (13), Contributing factors related to Nocturnal enuresis rating scale for frequency (1), Nocturnal enuresis related factors rating scale (4), were given for validity and expert suggestions did not recommend any change in the questionnaires.

RELIABILITY:

Reliability is defined as the extent to which the instrument yield the same results on repeated measures, concerned with consistency, accuracy, stability and homogeneity.

Test and retest method was employed to obtain the reliability of the tool for nocturnal enuresis related factors rating scale. As the co-efficient co-relation was 1.00 the tool was found to be highly reliable.

PILOT STUDY PROCEDURE:

"A pilot study is the whole study operation in miniature" it reveals the investigator about the feasibility, weakness, practicability of carrying out the main study. It helps to confirm the duration and to familiarize with administration and scoring of tools.

- (Barnum 2000)

- Duration of pilot study was one week from 21.4.16 to 27.4.16. 6 primary care givers and children with nocturnal enuresis were selected by using judgmental sampling technique.
- Confidentiality was assured among study participants. Pretest was done on first day using structured interview. Behavioral modification therapy was given by researcher . Bladder diary was given to primary care givers to supervise the children for nocturnal enuresis. The bladder diary was checked daily by the researcher to reinforce the importance of behavioral modification.
- One week later Post test was conducted on 27.4.16.
- The study assessed and found the instrument was feasible and practicable for main study.

DATA COLLECTION PROCEDURE:

Data was collected for 6 weeks at selected urban area from (5-5-2016 to 14-6-2016). A formal permission was obtained from the concerned urban area authority (Lakshmipuram urban area) to conduct study. The investigator identified children who fulfilled the criteria. Those who fulfilled the inclusion criteria were selected for the study after informed consent.

Data collection was done in the following phases:

Phase I: The investigator developed a rapport with the children of primary care givers and explained the purpose of the study. After getting verbal consent, the children were selected for the study.

Phase II: The demographic variables of children of primary care givers were filled by the mothers. Pre assessment was conducted for children of primary care givers to assess the levels of nocturnal enuresis and related factors. After pre assessment children and parents were divided into 7 groups and 5 children of primary care givers in each group. Duration of 1:10 minutes was spent for each sub group in during the pre assessment. Contamination of the behavioral modification therapy was prevented, as behavioral modification therapy was given in home settings based convenient of the participants.

The behavioral modification therapy was given by using AV aids such as PowerPoint presentation. The behavioral modification therapy was conducted in the home of children's at urban setting. Duration of 10 minutes was spent for each topic such as night lifting, waking with alarm, stop-start-training, good bladder health recommendation, good bowel health recommendation, retention control training, reinforcement therapy. Total of 1:10 minutes was spent for behavior modification therapy.

Phase III: Post assessment was carried out during 6^{th} week of data collection period. Post assessment was conducted for children of primary care givers, to assess the levels of nocturnal enuresis and related factors, by using the same questionnaire. Duration of 45 minutes was spent for each group for post assessment at the home setting.

PLAN FOR DATA ANALYSIS

Descriptive statistics are used for summarizing empirical information. The collected data will be analyzed using descriptive and inferential statistics using the following steps:

- Frequency and percentage of data is calculated to describe demographic variables with Mean and Standard Deviation.
- Effectiveness of behavioral modification therapy is analyzed using Paired ‘t’ test.
- Association of the post assessment levels of nocturnal enuresis related factors and the selected demographic variables for experimental group is analyzed using ‘Chi’- square test.

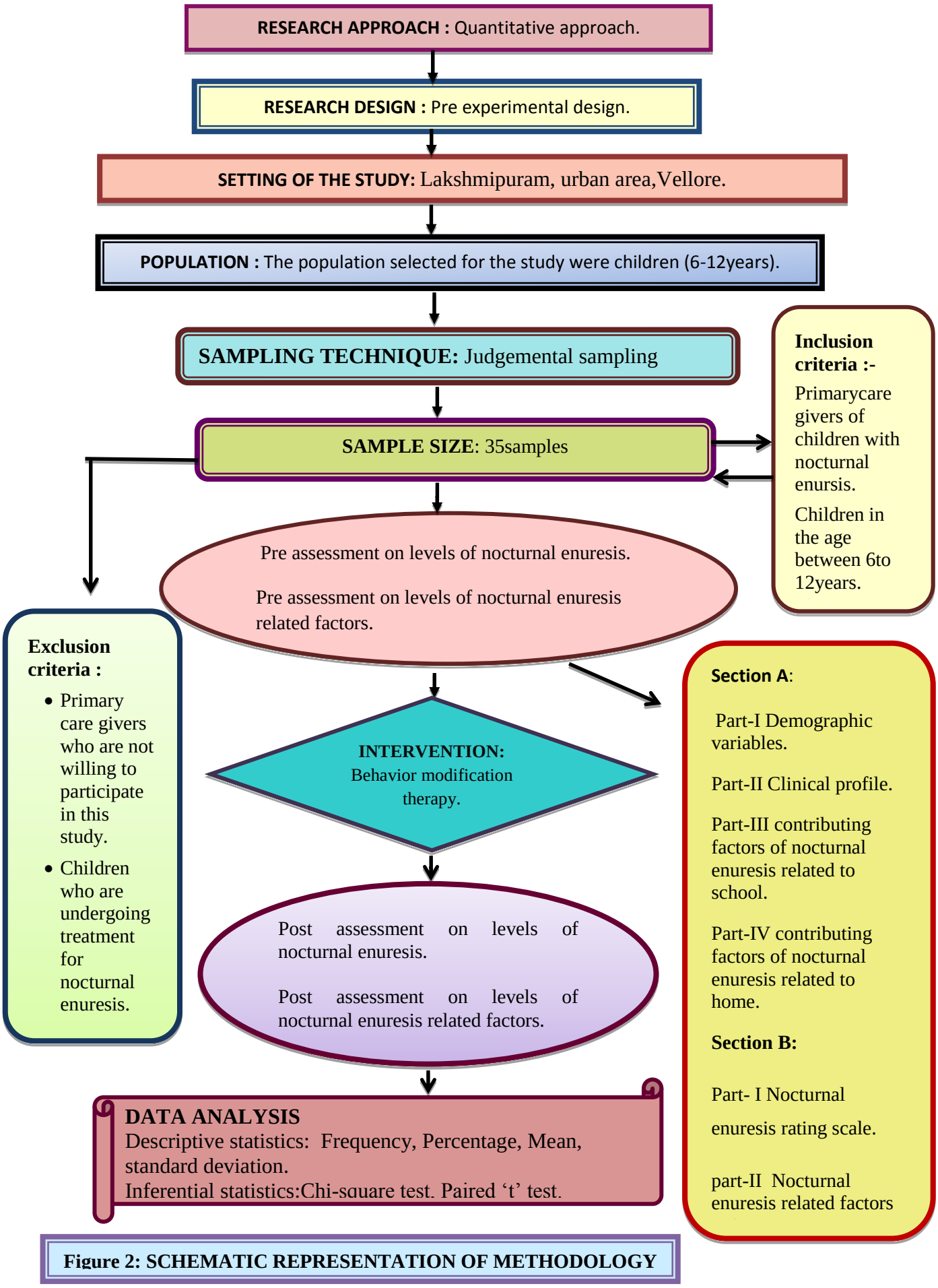

Figure 2: SCHEMATIC REPRESENTATION OF METHODOLOGY

CHAPTER-IV

DATA ANALYSIS AND INTERPRETATION

This chapter deals with the analysis and interpretation of data collected from 35 children with reference to the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers. The findings are tabulated, analyzed and interpreted in this chapter. The results and analysis are presented in the following order.

DATA ANALYSIS AND INTERPRETATION OF DATA:

SECTION A: Demographic variables of children and primary care givers.

SECTION B: Pre and post assessment of levels of nocturnal enuresis and related factors among children of primary care givers.

SECTION C: Effectiveness of behavioral modification therapy among children of primary care givers.

SECTION D: Association between post assessment scores of nocturnal enuresis and selected demographic variables of children and their primary care givers.

SECTION- A

Distribution of demographic variables of children and primary care givers.

Table 1: Frequency and percentage distribution of demographic variables of children and primary care givers.

n=35

Demographic Variables	No.	Percentage (%)
AGE OF THE CHILD		
6-8 years	15	43
8-10 years	13	37
10-12 years	07	20
SEX OF THE CHILD		
Male	19	54
Female	16	46
BIRTH ORDER OF THE CHILD		
One	22	63
Two	12	34
Three	01	03
More than three	-	-
NUMBER OF SIBLINGS		
Zero	10	29
One	24	68
Two	01	03
More than two	-	-
CARE TAKER		
Father	-	-
Mother	35	100
Guardians	-	-
MONTHLY INCOME OF THE FAMILY		
$\leq$ Rs.5000	05	14
Rs.5001 – 10,000	13	37
RS.10,001-15,000	16	46
Rs.15,001	01	03
FATHER'S EDUCATION		
Illiterate	12	34
Primary	14	40
Secondary	03	09
Higher secondary	01	03
Graduate	05	14

Demographic Variables	**No.**	**Percentage (%)**
MOTHER'S EDUCATION		
Illiterate	12	34
Primary	11	31
Secondary	08	23
Higher secondary	-	-
Graduate	04	12
FATHER'S OCCUPATION		
Unemployed	01	03
Unskilled laborer	28	80
Skilled laborer	05	14
Professional	01	03
MOTHER'S OCCUPATION		
Homemaker	30	86
Unskilled laborer	04	11
Skilled laborer	01	03
Professional	-	-
BOTH PARENTS ARE LIVING TOGETHER		
Yes	31	88
No, if no		
Separated	03	09
Death	01	03
PREVIOUS HISTORY OF ENURESIS IN PARENTS		
Yes	22	63
No	07	20
Don't know	06	17
PAST HISTORY OF ENURESIS IN SIBLINGS		
Yes	20	57
No	15	43
Don't know	-	-

Table 1 represents nearly half of the children 15(43%) were the age group of 6 to 8 years. Around 19(54%) were male children. More than half of the children 22 (63%) were in the birth order of one. Nearly three fourth of children 24(69%) have one sibling. All 35 (100%) children were taken care by mothers. Less than fifty percent of children 16(46%) had family income of Rs.10,001 to 15,000. More than one quarter of the

children 14(40%) fathers had upto primary education, whereas mothers 12(34%) were illiterate. Majority of the fathers 28(80%) were unskilled laborers, 30(86%) mothers were home makers, 31(89%) children parents were living together, 4(11%) were not living together, because 3(9%) children of parents were separated and 1(3%) child's father has died. More than half of children parents 22(63%) had previous history of nocturnal enuresis and 20(57%) children had previous history of nocturnal enuresis in siblings.

Table 2: Frequency and percentage distribution of nocturnal enuresis clinical profile of children. n=35

Clinical Profile	No.	Percentage (%)
History of UTI		
Yes	03	09
No	28	80
Don't know	04	11
History of surgery in genital area		
Yes	-	-
No	35	100
Pain during voiding		
Yes	12	34
No	23	66
Day time incontinence		
Yes	33	94
No	02	06
Day time urgency		
Yes	32	91
No	03	09
Toilet training started at the age of		
No	-	-
Yes, if yes	35	100
< 3 years	04	11
> 3 years	31	89
Habit of bedwetting		
< 3months	-	-
> 3months	35	100
Bedwetting time at night		
2 hours after sleep	09	26
Midnight	13	37
Early morning	13	37
Consulted with physician for bedwetting		
Yes	05	14
No	30	86
Have you tried any behavior modification therapy for nocturnal enuresis		
Yes, if yes		
Regularly	35	100
Occasionally	-	-
No		

Table 2 reveals that majority of the children 28(80%) had no history of UTI. None of the children 35 (100%) had a history of surgery in genital area. More than half of the children 23(66%) had no pain during voiding. Majority of the children 33(94%) had day time incontinence, 32(91%) had day time urgency. All the children 35 (100%) were started on toilet training, among them 31(89%) children started their toilet training after the age of 3 years, whereas 4 (11%) children started their toilet training between the age of 3 years. All the children 35 (100%) had habit of bedwetting for more than three months. More than one quarter half of the children 13(37%) had bedwetting time at midnight or early morning. Majority of the children 30(86%) have not consulted with a physician for bedwetting. All the children 35(100%) have tried behavior modification therapy for nocturnal enuresis such as, fluid restriction prior to bed time and mothers reminding the children to urinate before going to bed.

Table 3: Frequency and percentage distribution of school related contributing factors among children with nocturnal enuresis.

n=35

Factors related to schools	No.	Percentage (%)
Problem in studying		
Yes	6	17
No	29	83
Going to school is frightening		
Yes	17	48
No	18	52
Teacher has punished / scolded in front of others		
Yes	31	89
Occasionally	13	37
Frequently	13	37
Always	05	14
No	04	11
Fighting with friends in school		
No	24	69
Yes	11	31
Comfortable with school toilet		
Yes	15	43
No	20	57
Avoid using toilet at school		
Yes	13	37
No	22	63

Table 3 describes majority of the children 29(83%) had no problem in studying. Nearly half of the children 18(51%) felt going to school is frightening. Majority of the children 31(89%) were punished/scolded by teachers in front of others. Nearly three fourth of the children 24(69%) had history of fighting with friends in school. More than half of the children 20(57%) were not comfortable with school toilets. Nearly three fourth of the children 22(63%) were using school toilets, whereas 13(39%) children avoided using school toilets.

Table 4: Frequency and percentage distribution of home related contributing factors among children with nocturnal enuresis. n=35

Factors related to home	No.	Percentage (%)
Frightening situation in family		
Yes	11	31
No	24	69
Being compelled for academic achievement		
Yes	13	37
No	22	63
Fear of toilet		
Yes	15	43
No	20	57
Child having nightmares		
Yes	17	49
No	18	51
Fear of animals		
Yes	31	89
No	04	11
Having punished the child for bedwetting		
Yes	34	97
No	01	03
Self – esteem is affected by bedwetting habit		
Yes ,if yes	35	100
Cry	05	14
Guilty	18	51
Afraid	09	26
Avoid staying out of home	03	09
No	-	-
Feel bad about habit of bedwetting		
Yes	31	89
No	4	11

Table 4 reports that nearly three fourth of the children 24(69%) had no frightening situation in the family. More than half of the children 22 (63%) were being compelled for academic achievement. Around 20 (57%) children had no fear of toilet, 18(51%) had no history of night mares. Majority of the children 31 (89%) were found having fear of animals. Around 34 (97%) children were punished for bedwetting, 18 (51%) children felt guilty because of bedwetting habit. Majority of the children 31(89%) felt bad about habit of bedwetting.

SECTION- B

Pre and post assessment on children with nocturnal enuresis frequency.

Figure 3: Pre and post assessment of nocturnal enuresis rating scale among children.

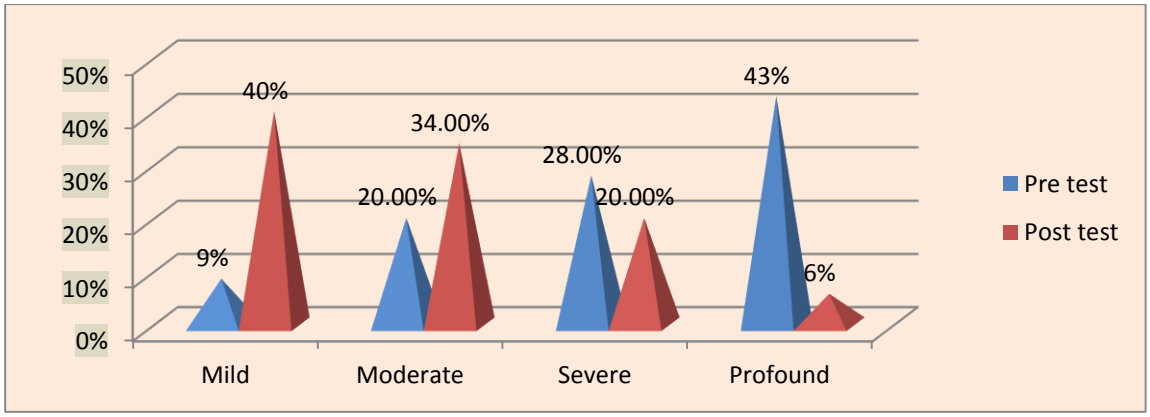

Figure 3: Cone graph showing percentage distribution of children according to pre and post assessment of nocturnal enuresis.

Figure 3 shows that, least number of children 3(9%) had mild levels of nocturnal enuresis, 7 (20%) had moderate levels of nocturnal enuresis, more than one quarter of the children 10(28%) had severe levels of nocturnal enuresis, nearly half of the children 15(43%) had profound levels of nocturnal enuresis during pre assessment, whereas after behavioral modification therapy, nearly half of the children 14(40%) had mild levels of nocturnal enuresis, less than half of the children 12(34%) had moderate levels of nocturnal enuresis, less than one quarter 7(20%) children had severe levels of nocturnal enuresis and least number of children 2(6%) had profound levels of nocturnal enuresis.

Assessment of levels of nocturnal enuresis related factors among children.

Figure 4: Pre and post assessment on nocturnal enuresis related factors among children.

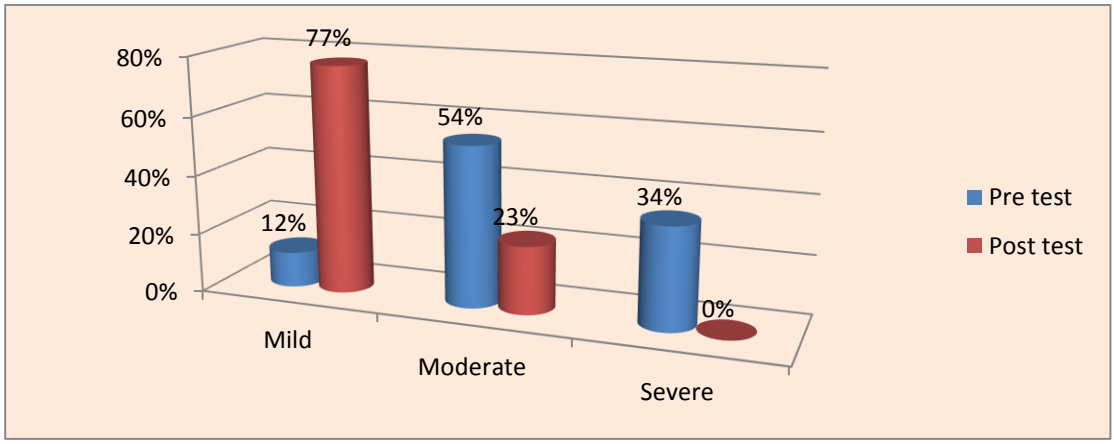

Figure 4: Cylinder graph showing percentage distribution of children according to pre and post assessment levels of nocturnal enuresis related factors.

Figure 4 shows that, less than one quarter of the children 4(12%) had mild levels of nocturnal enuresis, more than half of the children 19 (54%) had moderate levels of nocturnal enuresis, less than half of the children 10(28%) had severe levels of nocturnal enuresis during pre-test. After behavioral modification therapy, majority of the children 27(77%) had mild levels of nocturnal enuresis, below the one quarter of the children 8(23%) had moderate levels of nocturnal enuresis, none had severe levels of nocturnal enuresis.

SECTION C

Effectiveness of behavioral modification therapy among children of primary care givers.

Table 5: Comparison of Pre and Post assessment mean levels on nocturnal enuresis among children of primary care givers.

S.no.	Behavioral Modification Therapy	Mean	Standard Deviation	Mean difference	Paired 't' test
1.	Pre test	9.50	3.23		
2.	Post test	4.22	1.95	5.28	13.46*

Note * statistically significant (p<0.001)

Table 5 shows that in pre-test mean score is 9.50 and SD ± 3.23, whereas after behavioral modification therapy the mean score decreased to 4.22 and SD decreased to ± 1.95. The calculated paired 't' test value 13.46 is greater than that of the table value 2 (3.65), which is significant at p<0.001 level. There was improvement of levels of nocturnal enuresis scores among children after behavior modification therapy which shows effectiveness. Hence hypothesis 1 was accepted.

SECTION D

Association between levels of nocturnal enuresis and demographic variables in post-test for children of primary care givers.

Demographic variables	Children		Nocturnal enuresis level						Chi Square x^2 Value
	No.	%	Mild		Moderate		Severe		
			No	%	No	%	No	%	
Age									
6-8 years	15	43	14	40	1	3	-	-	9.7 S*
8-10 years	13	37	7	20	6	17	-	-	
10-12 years	7	20	6	17	1	3	-	-	
Sex of the child									
Male	19	54	16	46	3	8	-	-	4.15 S*
Female	16	46	11	32	5	14	-	-	
Birth order									
One	22	63	15	43	7	20	-	-	2.6 NS
Two	12	34	11	31	1	3	-	-	
Three	1	3	1	3	-	-	-	-	
More than three	-		-	-	-	-	-	-	
Number of siblings									
Zero	10	28	5	14	5	14	-	-	6.01 NS
One	24	69	21	60	3	9	-	-	
Two	1	3	1	3	-	-	-	-	
More than two	-		-	-	-	-	-	-	
Care taker									
Father	-	-	-	-	-	-	-	-	0 NA
Mother	35	100	27	77	8	23	-	-	
Guardians	-	-	-	-	-	-	-	-	
Monthly income of the family									
$\leq$ Rs.5,000	5	14	5	14	-	-	-	-	2.32 NS
Rs.5,001 – 10,000	13	37	8	23	5	14	-	-	
Rs.10,000 – 15,000	16	46	13	37	3	9	-	-	
$\leq$ Rs.5,000	1	3	1	3	-	-	-	-	

Demographic variables	Children		Nocturnal enuresis level						Chi Square x^2 Value
	No.	%	Mild		Moderate		Severe		
			No	%	No	%	No	%	
Father's education									9.84 NS
Illiterate	12	34	11	31	1	3	-	-	
Primary	14	40	10	28	4	12	-	-	
Secondary	3	9	-	-	3	9	-	-	
Higher Secondary	1	3	1	3	-	-	-	-	
Graduate and Above	5	14	5	14	-	-	-	-	
Mother's education									
Illiterate	12	34	12	34	-	-	-	-	
Primary	11	31	7	20	4	11	-	-	2.929 NS
Secondary	8	23	5	14	3	9	-	-	
Higher Secondary	-	-	-	-	-	-	-	-	
Graduate and Above	4	12	3	9	1	3	-	-	
Father's occupation									
Unemployed	1	3	1	3	-	-	-	-	O.201 NS
Unskilled Laborer	28	80	21	60	7	20	-	-	
Skilled laborer	5	14	4	11	1	3	-	-	
Professional	1	3	1	3	-	-	-	-	
Mother's occupation									1.65 NS
Home maker	30	86	22	63	8	23	-	-	
Unskilled laborer	4	11	4	11	-	-	-	-	
Skilled laborer	1	3	1	3	-	-	-	-	
Professional	-	-	-	-	-	-	-	-	

Demographic variables	Children		Nocturnal enuresis level						Chi Square x^2 Value
	No.	%	Mild		Moderate		Severe		
			No	%	No	%	No	%	
Both parents are living together Yes	31	88	24	68	7	20	-	-	0.017 NS
No	4	12	3	9	1	3	-	-	
Previous history of enuresis in parents Yes	22	63	16	46	6	17	-	-	2.13 NS
No	7	20	5	14	2	6	-	-	
Don't know	6	17	6	17	-	-	-	-	
Past history of enuresis in siblings Yes	20	57	19	54	1	3	-	-	10.45 S*
No	15	43	8	23	7	20	-	-	
Don't know	-	-	-	-	-	-	-	-	

Note: S = Significant, NS= Not Significant. P<0.05.

Table 6 results represents that, age of the child, sex of the child, past history of enuresis in siblings are statistical significant level at ($p<0.05$) whereas, birth of order of the child, numbers of siblings, care taker, monthly income , father's education, mother's education, father's occupation, mother's occupation, both parent's are living together ,previous history of enuresis in parent's are not significant. Hence it is interpreted the difference in mean score values are true. Hence hypothesis 2 was accepted.

CHAPTER -V

DISCUSSION

This chapter concentrates on the results derived from the statistical analysis and its pertinence to the objectives set for the study. This study assessed the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary caregivers (6-12years) at selected urban area, Vellore.

30 children in the age group 6-12 years were identified and selected for the study using judgmental sampling technique. Nocturnal enuresis frequency and related factors were assessed by using nocturnal enuresis rating scale. All the items were scored as below. Each item was given a least score of 0 and highest score of 4. The maximum score was 16. Pre assessment was conducted for children of primary care givers.

Effectiveness of behavioral modification therapy on nocturnal enuresis was conducted for the children of primary care givers. Post assessment was conducted after 4 weeks at the urban settings. Same nocturnal enuresis rating scale was used for the post assessment.

The demographic variables were collected using an investigator prepared structured questionnaire. Nearly half of the children 15(43%) were the age group of 6 to 8 years. Around 19(54%) were the sex of male children. More than half of the children 22 (63%) were in the birth order of one. Nearly three fourth of children 24(69%) had one sibling only. All 35 (100%) children were taken care by mothers. Less than fifty percent of children 16(46%) had family monthly income of Rs.10,001 to 15,000. More than one quarter of the children's fathers14(40%) had upto primary education, whereas mothers

12(34%) were illiterate. Majority of the fathers 28(80%) were unskilled laborers, 30(86%) mothers were home makers, 31(89%) children parents were living together, 4(11%) were not living together, because 3(9%) children of parents were separated and 1(3%) child's father has died. More than half of children's parents 22(63%) had previous history of nocturnal enuresis and 20(57%) children had previous history of nocturnal enuresis in siblings.

Clinical profile of children with nocturnal enuresis were assessed by using structured questionnaire. The result represented that majority of the children 28(80%) had no history of UTI. None of the children 35 (100%) had history of surgery in the genital area. More than half of the children 23(66%) had no pain during voiding. Majority of the children 33(94%) had day time incontinence, 32(91%) had day time urgency. All the children 35 (100%) were toilet trained, in that 31(89%) children started their toilet training after the age of 3 years, whereas 4 (11%) children started between the age of 3 years. All the children 35 (100%) had habit of bedwetting. More than one quarter half of the children 13(37%) were bedwetting at midnight or early morning. Majority of the children 30(86%) have not consulted with physician for bedwetting. All the children 35(100%) tried behavior modification therapy for nocturnal enuresis such as, fluid restriction prior to bed time and mothers reminding the children to urinate before going to bed.

The above findings are supported with the findings of the study done by **Merion (2012)** to assess the prevalence and frequency of nocturnal enuresis in Pusan, Korea a total of 12,570 children with nocturnal enuresis. The study result showed that more than

half the parents wake the child at night to void and/or restricted the child's fluid intake of the enuresis children, only 13.7% had consulted a health worker.

The study findings are also supported with the findings of the study done by **Jon Heron (2011)** to assess the family history of nocturnal enuresis and urinary Incontinence in south America a total sample size of 200 children were selected for the study. The result was show that urinary incontinence was 7.8%, 6.8% had infrequent urine, 1.0% had severe daytime urinary incontinence and 8.8% had nocturnal enuresis

Contributing factors related to school

Children with nocturnal enuresis contributing factors related to school were assessed by using structured questionnaire. The result represented that majority of the children 29(83%) had no problem in studying. Nearly half of the children 18(51%) felt going to school was frightening. Majority of the children 31(89%) were punished/scolded by teachers in front of others for wrong behavior. Nearly three fourth of the children 24(69%) were fighting with friends in school. More than half of the children 20(57%) were not comfortable with school toilets. Nearly three fourth of the children were 22(63%) using school toilets, whereas 13(39%) children avoided using school toilets.

Contributing factors related to home

Children with nocturnal enuresis contributing factors related to home were assessed by using structured questionnaire. The result represented that nearly three fourth of the children 24(69%) did not have frightening situation in family. More than half of the children 22 (63%) were being compelled for academic achievement. Around 20 (57%) children had no fear of toilet, 18(51%) had no night mares. Majority of the

children 31 (89%) had fear of animals, 34 (97%) were punished for bedwetting. Around 18 (51%) children felt guilty because of bedwetting habit. Majority of the children 31(89%) feel bad about habit of bedwetting.

The first objective of the study was to assess the levels of nocturnal enuresis among children of primary care givers .

Nocturnal enuresis rating scale

In this study, least number of children 3(9%) had mild levels of nocturnal enuresis, 7 (20%) had moderate levels of nocturnal enuresis, more than one quarter of the children 10(28%) had severe levels of nocturnal enuresis, nearly half of the children 15(43%) had profound levels of nocturnal enuresis during pre assessment, whereas after behavioral modification therapy, nearly half of the children 14(40%) had mild levels of nocturnal enuresis, less than half of the children 12(34%) had moderate levels of nocturnal enuresis, less than one quarter 7(20%) children had severe levels of nocturnal enuresis and least number of children 2(6%) had profound levels of nocturnal enuresis.

The above findings are supported with the findings of a study done by **S.D. Lee et.,al (2012)** to estimate the prevalence and frequency of enuresis among children of elementary school at Pusan, Korea.12, 570 children of parents aged between 7–12 years samples were asked to complete questionnaires which included items about the presence and frequency of enuresis. The overall response rate to the questionnaire was 55.8% (girls 28.2%, boys 27.6%). The prevalence and frequency of enuresis was 9.2% and 1.4%, respectively.

The study finding also supported with the findings of this study done by **Jessie.F (2013)** that assessed the clinical trial of a behavioral therapy to reduce nocturnal enuresis in boarding children at Fuxin city, China. A total sample size of 133 children were selected in seven boarding schools. The result concluded that the therapy became effective after 6 weeks of training. By the final month of training, in treatment group, children's wet episodes had been reduced by 0.6 episodes per day, a 26% reduction over baseline. This reduction in the number of wet episodes was statistically significant, both with respect to this group's baseline levels of nocturnal enuresis and in comparison with the performance of the children in control group. The number of wet episodes in the control group remained about the same throughout training and the 22-week follow-up period.

The study findings are also supported with the findings of the study done by **Hansakunachai T (2012)** to assess the prevalence of enuresis among school-age children in Thailand. A total of 3453 parents of children aged 5 to 15 years completed the questionnaire. The overall response rate to the questionnaire was 70%. The prevalence of enuresis was 4.2%, nocturnal enuresis was 3.9%. The prevalence declined with increasing age from 10%, 5.3%, 3%, and 1.2% at ages 5, 7, 10, and 12 years, respectively. There was no enuresis among children from ages 13 to 15 years.

The study findings are also supported with the findings of from study done by **Azhir A (2013)** to assess the prevalence and frequency of enuresis among primary school children in Istanbul, Turkey. A total of 4500 self-administered questionnaire were distributed to parents of children aged 6-12 years attending 30 primary schools. The result concluded that the overall response rate to the questionnaire

was 69.9%, enuresis was reported in 216 children (7%), comprising 6.2% for nocturnal enuresis according to ICD10 and 3.3% according to DSM IV, 0.5% for diurnal enuresis and 0.8% for combined day and night wetting. Primary nocturnal enuresis was reported in 166 children (5.3%). Seventy-one (50.7%) of the 140 children with nocturnal enuresis had > or =3 wet nights per week.

Nocturnal enuresis related factors rating scale

In this study, the nocturnal enuresis factors such as sleep interrupted with bed wetting, a wake but avoid going to toilet, drinking water frequently in the evening hours, complaints of constipation, it revealed that less than one quarter of the children 4(12%) had mild levels of nocturnal enuresis, more than half of the children 19 (54%) had moderate levels of nocturnal enuresis, less than one third of the children 10(28%) had severe levels of nocturnal enuresis during pre-test. After behavioral modification therapy, majority of the children 27(77%) had mild levels of nocturnal enuresis, below the one quarter of the children 8(23%) had moderate levels of nocturnal enuresis, none had severe levels of nocturnal enuresis.

These study findings were supported by the findings of a study done by **Jeanette s. Brown et.,al (2013)** that evaluated the levels of nocturnal enuresis and urinary incontinence (UI) in children at Karve Area, Pune. A total of 48 children were selected for the study. The study result showed that children in the immediate intervention group had mild levels of nocturnal enuresis compared with the wait-list control group (p <0.001).The immediate intervention group experienced 60% reduction (30% to 89%) in

weekly UI episodes, compared with 15% (9% to 25%) in the wait-list control group ($p < 0.05$) and had greater improvement in nocturnal enuresis scores.

The study finding also supported with the findings of this study done by **Melvin D (2011)** that assessed the pediatric treatment program for enuresis at Nigeria, South Africa. A total of 127 children were selected for the study. The outcome data were obtained on 110 children. Among these the results concluded that, at the end of one year, 51% not had "accidents" for more than six months. Another 27% showed marked improvement and were having only rare episodes of enuresis. 14% of these children showed some improvement, but continued to have enuresis, while 8% showed no improvement during the treatment year. These four outcome groups were compared with respect to a large number of demographic, developmental, psychosocial, and clinical variables.

The study findings also supported with the findings of this study done by **Grace Rattue (2012)** that assess the bedwetting linked to constipation in children at south America. A total of 30 children aged between 5-15 years were selected for the study. The results concluded that, constipation was associated with enuresis. The researchers found that after for laxative therapy the majority of the children 83% (25 children) were cured of bedwetting within 3 months.

Another study finding also supported with the findings of this study done by **Pulido (2012)** that assessed the levels of nocturnal enuresis among children in New York City. A total of 50 samples were selected and the researcher used a structured interview schedule to collect the data from children. The pre-test results concluded that only 10

(20%) of children had mild level, 15 (30%) of children had a moderately level enuresis and 25 (50%) of children had severe level nocturnal enuresis. In post test 35 (70%) of children had mild level enuresis, 13(25%) of children had moderate level enuresis and only 2 (5%) of children had severe enuresis.

The Second objective of the study was to evaluate the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers .

In this study, during pre assessment mean score is 9.50 and SD ± 3.23, whereas after behavioral modification therapy, the mean score decreased to 4.22 and SD decrease to ± 1.95. The calculated paired 't' test value 13.46 is greater than that of the table value 2 (3.591), which is significant at $p<0.001$ level. There was improvement on levels of nocturnal enuresis scores among children after, behavior modification therapy which shows effectiveness, hence hypothesis 1 was accepted.

The above findings are supported by the findings of a study done by **Rodrigo F (2012)** that assessed the behavioral alarm treatment for nocturnal enuresis in Brazil, South America. A total of 84 children and adolescents received alarm treatment together with weekly psychological support sessions for individual families or groups of 5 to 10 families.

The results concluded that 71% of the participants achieved success of 14 consecutive dry nights. The result was similar for children and adolescents and for individual or group support.

Another study finding also supported with the findings of this study done by **Hansakunachai.T (2012)** who assessed the effectiveness of behavioral therapy among school-age children with nocturnal enuresis in Thailand. A total of 3453 parents of

children aged 5 to 15 years completed the questionnaire. The result concluded that behavioral techniques mostly used by parents for management of their children with bed-wetting were ensuring that the child voids before bedtime (72.9%), waking the child up at night to void (61.8%), and evening water intake restriction (28.5%).

The study finding also supported with the findings of this study by **F. Christian von Zuben (2010)** to determine the effectiveness of various behavioral modification therapy and medical treatment for nocturnal enuresis in a large, diverse population of children in Philadelphia, Pennsylvania City. Families were contacted 6 weeks later to determine what treatment they chose and whether their child still wet. Families primarily chose an alarm therapy (31%), followed by waking the child during night time (22%) and reward system (9%). Some preferred no treatment (23%). Fifty-six percent of patients using the alarm therapy were completely dry compared to 18% using desmopressin acetate (p&lt0.001). In a heterogeneous population 6 weeks after a single visit, children whose parents chose the nocturnal enuresis alarm therapy were most likely to be completely dry.

The study findings also supported with the findings of this study done by **Joseph (2013)** to assess the effectiveness of behavioral modification therapy in a Malappuram, Kerala dist. The study included a total of 100 children. Behavioral modification therapy was given for 4 weeks of duration to parents and children after pretest. Nocturnal enuresis levels were reassessed using the same tool. The results concluded that ($p<0.05$) level of significance was 32.9% in posttest, than the pretest 67.7% at ($p<0.05$) level of significance. The calculated paired-'t' test value 4.93 is greater than that of the table value, this implies that behavioral modification therapy was effective.

The study findings also supported with the findings of the study done by **Walworth (2012)** who assessed one group pre-test and post-test on effectiveness of behavioral modification therapy regarding nocturnal enuresis in Gujarat. A structured interview schedule was administered among 60 children. The results showed that $p < 0.05$ level of significant was 63.5% than the pre-test 36.5%. The calculated paired 't' test value 6.36 is greater than that of the table value 2. The study concluded that the behavioral modification therapy was effective among children .

Third objective of the study was to association between the post test scores of nocturnal enuresis and selected demographic variables.

The 'chi- square' test was used to find out the association between post- test levels of nocturnal enuresis and selected demographic variables such as age, sex of the child, past history of enuresis in siblings are statistical significant level at ($p<0.05$)whereas, birth of order of the child, numbers of siblings, care taker, monthly income , father's education, mother's education, father's occupation, mother's occupation, both parent's are living together, previous history of enuresis in parent's are not significant. Hence it is interpreted that the difference in mean score values are true and the hypothesis 2 was accepted.

The study findings were supported by the findings of another study done by **Ahmad-Ali (2011)** who assessed the episode of nocturnal enuresis in Uremia, Iran. A total of 918 children with nocturnal enuresis were selected for study. The result showed that episode of nocturnal enuresis was 18.7% (n = 172) in experimental and 5.5% (n=51) in control. There was no significant gender difference between these two groups. Crowded families,

positive family history, low educational level of parents, jobless father, working mother, single parent, poor school performance, positive history of urinary tract infection (UTI) are statically significant level at ($p<0.05$).

The study findings also supported with the findings of the study done by **Chen.J (2014)** that assess the effectiveness of behavioral modification therapy in decreasing the nocturnal enuresis in Jothpur, Delhi. A total sample size of 200 children with nocturnal enuresis were selected. The students were allotted into experimental and control groups. The study showed that the demographic variables such as age, previous history of enuresis in siblings are statistically associated at $p<0.05$. There was no significant association in other demographic characteristics such as educational status, occupation status, religion and number of siblings. The pretest nocturnal enuresis score of experimental group was (88.6%) and control group was (94.4%). In post test experimental group was (35.8%).It is statistically significant at $p<0.05$ level than the control group (73.3%).

The study findings also supported the findings of the study done by **Bradbury M (2011)** that assessed the efficacy of alarm treatment among children in UK. A total of 35 children were selected. The result concluded that at the end of the treatment period, children receiving combination therapy had dry nights per week (mean: 4.8) than children using an alarm alone (mean: 6.1).In addition, more children achieved an initial success (4 weeks of dryness). following combination treatment (27 children [75%]) compared with alarm therapy (16 children [46%]. which was statistically significant at $P < 0.005$).

CHAPTER- VI

SUMMARY AND RECOMMENDATIONS

This chapter deals with summary, conclusion and implications of the study in the field of nursing. This also presents the recommendations for the future research.

SUMMARY:

This study was undertaken to assess the "effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore."

OBJECTIVES:

1. To assess the levels of nocturnal enuresis among children of primary care givers.
2. To evaluate the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers.
3. To find out association between the post assessment scores of nocturnal enuresis and the selected demographic variables.

Based on the objectives, the following hypotheses were formed:

- H_1 There is a significant difference between the pre and post assessment scores of nocturnal enuresis behavior among children.
- H_2 There is a significant association between the post assessment nocturnal enuresis scores among children and their selected demographic variables.

The reliability of the tool was checked by test-retest method. The tool and the behavior modification therapy plan were validated by 6 experts and the feasibility of the

study was found out by conducting a pilot study which included 5 children, at Vellore. The study was found to be feasible to proceed with the main study.

The conceptual framework was based on Ludwig Von Bertalanffy's general system theory.

The tool used in the study had two sections.

SECTION-A

Part-I: It consisted of demographic variables of children of primary care givers.

Part-II: The self-administered questionnaire was developed based on the literature and with the guidance of experts. A self-administered questionnaire was used during pre assessment to assess the clinical profile of children with nocturnal enuresis.

Part-III: The self-administered questionnaire was developed based on the literature and with the guidance of experts, to assess the nocturnal enuresis contributing factors related to school .

Part-IV: The self-administered questionnaire was developed based on the literature and with the guidance of experts, to assess the nocturnal enuresis contributing factors related to home.

SECTION-B

Part-I: Nocturnal enuresis rating scale related to frequency of nocturnal enuresis.

It consists of one item related to frequency of nocturnal enuresis in children.

SCORE INTERPRETATION	FREQUENCY OF NOCTURNAL ENURESIS
Mild	2-3times per week x 3months
Moderate	4-5times per week x 3months
Severe	5-6times per week x 3months
Profound	> 6 times per week x 3months

PART-II: Nocturnal enuresis related factors rating scale

It includes 4 items such as, sleep interrupted with bed wetting, wakes up but avoid going to toilet, drinking water frequently in the evening hours, complaints of constipation. All the items were scored as below. Each items scored least score of 0 and highest score 4. The maximum score was 16.

MAJOR FINDINGS OF THE STUDY:

- Nearly half of the children 15(43%) were the age group of 6 to 8 years. Around 19(54%) were male children. More than half of the children 22 (63%) were in the birth order of one. Nearly three fourth of children 24(69%) have one sibling. All 35 (100%) children were taken care by mothers. Less than fifty percent of children 16(46%) had family income between Rs.10,001 and 15,000 monthly.

- More than one quarter 14(40%) of the children father's had upto primary education, whereas mothers 12(34%) were illiterate. Majority of the fathers 28(80%) were unskilled laborers, 30(86%) mothers were home makers, 31(89%) children parents were living together, 4(11%) were not living together, because 3(9%) children of parents were separated and 1(3%) child's father had died. More than half of children parents 22(63%) had previous history of nocturnal enuresis and 20(57%) children had previous history of nocturnal enuresis in siblings.
- Majority of the children 28(80%) had no history of UTI. None of the children 35 (100%) had a history of surgery in genital area. More than half of the children 23(66%) had no pain during voiding. Majority of the children 33(94%) had day time incontinence, 32(91%) had day time urgency. All the children 35 (100%) were started on toilet training, among them 31(89%) children started their toilet training after the age of 3 years, whereas 4 (11%) children started their toilet training between the age of 3 years.
- All the children 35 (100%) had habit of bedwetting for more than three months. More than one quarter half of the children 13(37%) had bedwetting time at midnight or early morning. Majority of the children 30(86%) have not consulted with physician for bedwetting. All the children 35(100%) have tried behavior modification therapy for nocturnal enuresis such as, fluid restriction prior to bed time and mothers reminding the children to urinate before going to bed.
- Majority of the children 29(83%) had no problem in studying. Nearly half of the children 18(51%) felt going to school was frightening. Majority of the children 31(89%) were punished/scolded by teachers in front of others. Nearly three fourth

of the children 24(69%) had history of fighting with friends in school. More than half of the children 20(57%) were not comfortable with school toilets. Nearly three fourth of the children 22(63%) were using school toilets, whereas 13(39%) children avoided using school toilets.

- Nearly three fourth of the children 24(69%) had no frightening situation in the family. More than half of the children 22 (63%) were being compelled for academic achievement. Around 20 (57%) children had no fear of toilet, 18(51%) had no history of night mares. Majority of the children 31 (89%) were found having fear of animals. Around 34 (97%) children were punished for bedwetting, 18 (51%) children felt guilty because of bedwetting habit. Majority of the children 31(89%) felt bad about habit of bedwetting.
- Least number of children 3(9%) had mild levels of nocturnal enuresis, 7 (20%) had moderate levels of nocturnal enuresis, more than one quarter of the children 10(28%) had severe levels of nocturnal enuresis, nearly half of the children 15(43%) had profound levels of nocturnal enuresis during pre assessment, whereas after behavioral modification therapy, nearly half of the children 14(40%) had mild levels of nocturnal enuresis, less than half of the children 12(34%) had moderate levels of nocturnal enuresis, less than one quarter 7(20%) children had severe levels of nocturnal enuresis and least number of children 2(6%) had profound levels of nocturnal enuresis.
- Less than one quarter of the children 4(12%) had mild levels of nocturnal enuresis, more than half of the children 19 (54%) had moderate levels of nocturnal enuresis, less than half of the children 10(28%) had severe levels of

nocturnal enuresis during pre-test. After behavioral modification therapy, majority of the children 27(77%) had mild levels of nocturnal enuresis, below the one quarter of the children 8(23%) had moderate levels of nocturnal enuresis, none had severe levels of nocturnal enuresis.

- The post assessment findings revealed that there was a significant difference at ($p<0.001$) in the mean difference score of pre and post assessment on effectiveness of behavioral modification therapy. There was an improvement in levels of nocturnal enuresis scores among children after behavior modification therapy, hence hypothesis 1 was accepted.
- There was a significant association ($p<0.05$) between the post assessment scores of nocturnal enuresis and the selected demographic variables such as age of the child, sex of the child and past history of enuresis in siblings.

The above result indicate that the behavioral modification therapy had a significant effect in reducing the levels of nocturnal enuresis among children.

NURSING IMPLICATIONS

The findings of the present study enable to determine the effectiveness of behavioral modification therapy on nocturnal enuresis. The findings of the study have implications for nursing practice, nursing education, nursing administration and nursing research.

NURSING PRACTICE

- The pediatric nurse can teach and demonstrate behavioral modification therapy to the children with nocturnal enuresis in pediatric OPD as well as in the pediatric wards.
- The pediatric nurse can encourage school teachers to identify the early signs of nocturnal enuresis.

NURSING EDUCATION

- Conference, workshop and seminars can be organised for nurses to impart their knowledge regarding behavioral modification therapy for nocturnal enuresis.
- In-service education for nurses to update their knowledge and skills in caring for children and family who are facing the challenge of nocturnal enuresis.
- Nursing curriculum has to focus on enabling the nursing students to develop their skills in early identification of children with nocturnal enuresis and the management.
- The pediatric nurse can conduct awareness programmes in the schools regarding nocturnal enursis and its management.

NURSING RESEARCH

- This study will be a valuable reference for future researchers.
- This study is a preliminary step for exploring the concept of behavioral modification therapy on nocturnal enuresis.
- The results of the study encourages future researchers to conduct further explorative studies regarding behavioral modification therapy on nocturnal enuresis.

NURSING ADMINISTRATION

- The nurse administrators shall organize behavior modification therapy training for the nurses and mothers.
- Nurse administrators should provide resources for nurses to carry out behavioral modification therapy.
- Effectiveness of various nurses oriented interventions are to be evaluated by administrators to provide quality care.

RECOMMENDATION

- A similar study can be under taken for a large sample in different settings.
- An explorative study can be conducted among children of various age groups regarding behavioral modification therapy on nocturnal enursis.
- A comparative study can be conducted among rural and urban children regarding awareness on nocturnal enursis.

- A further study can be carried out as a comparison between school and clinical settings.

CONCLUSION

The present study assessed the "Effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore."

Before the behavioral modification therapy the levels of nocturnal enuresis were high in children. After the behavioral modification therapy the results revealed that nocturnal enuresis rate was decreased. This shows that the behavioral modification therapy was effective as there was positive mean difference (5.28). So educating the children of primary care givers regarding nocturnal enuresis and its management will help for early detection and prevention of effects of nocturnal enuresis. Many studies had strongly emphasized the impact of information that would focus on nocturnal enuresis and behavioral modification therapy will promote good health, less stress among children and their family, which will prepare them for future generations.

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APPENDIX - A

Letter Granting Permission to Conduct Main Study

From,

Thiru.D.Kumar , M.Com,.
Commissioner
Vellore Corporation
Vellore,

To,

Sri Narayani College of Nursing
Sripuram, Thirumalaikodi,
Vellore – 632 055.

Roc.No.11240 / 2011 / H4 **Date. 22.02.2016**

Sir.

Sub: Permission - Vellore City Municipal Corporation – Permission to conduct research Disseratationn in urban Health Centre, Lakshmipuram, Vellore - Regardings

Ref : Your Letter Dt. 08.02.16

****

Permission is here by accorded to conduct research Disseratationn in urban Health Centre, Lakshmipuram, Vellore to Tmt .Savitha .V.II year MSc (N) Student of your College

//t.c.f.b.o/

(s.d)/ Thiru.D.Kumar , M.Com,.
Commissioner

For Commissioner
Vellore City Municipal Corporation

22.2.16

Coby to:

The Chief Medical Officer,
Lakshmipuram, and urban Health Centre,

APPENDIX – B

CERTIFICATE OF VALIDATION

This is to certify that the questionnaire (Non Standardized Tools) and the Demographic variables for the research study **"AN EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF BEHAVIORAL MODIFICATION THERAPY ON NOCTURNAL ENURESIS AMONG CHILDREN OF PRIMARY CARE GIVERS (6-12YEARS) AT SELECTED URBAN AREA, VELLORE**,prepared by **Mrs. Saritha. V** has been validated.

Name :

Designation :

Date :

Institution :

Signature :

APPENDIX– C

Letter requesting participation in the study

Dear participant,

I Mrs.Saritha.V II year MSc Nursing student of Sri Narayani College of Nursing, conducting "An experimental study to assess the effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore.As a partial fulfillment of my Masters Degree. In this regard I would like to administer a structured questionnaire to you and I assure you that the information obtained from you will be strictly confidential and will be used for the study purpose only. I need your whole hearted cooperation in this study to gather information and I will be grateful to you for the same.

Thanking you in anticipation,

Yours sincerely,

Mrs.Saritha.V

CONSENT

I have been informed for the purpose of the study and agree to participate in the same.

Date:

Place:

Signature of participants

APPENDIX-D

A LIST OF EXPERTS FOR TOOL VALIDATION

1. Prof.Mrs. Mary Anbarasi, S, (N),

Department of Child Health Nursing,

CMCH College of Nursing,

Vellore.

2. Prof.Mrs.Nesa Sathya Satchi, S, (N),

Department of Child Health Nursing,

Apollo College of Nursing,

Chennai.

3. Prof.Mrs. Jennifer.G. S, (N),

Department of Child Health Nursing,

Apollo College of Nursing,

Chennai.

4. Prof.Mrs.Jamuna Rani.R. S, (N),

Department of Child Health Nursing,

Apollo College of Nursing,

Chennai.

5.Prof.Mrs.Sunitha Priyadarshini, S, (N),

Department of Child Health Nursing,

Arun College of Nursing,

Vellore.

6. Mr. Muthurathinum, Sc, (Biostatistics)

Biostatistican,

Sri Narayani College of Nursing,

Vellore.

APPENDIX-E

CERTIFICATION OF ENGLISH EDITING.

To whomsoever it may concern

This is to certify that Mrs. Saritha.V, II Year M.Sc Nursing, Department of Child Health Nursing has undertaken a dissertation for the partial fulfillment of M.Sc(N) Degree course. The title of the study is, **"Effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore".** She has prepared the tool and intervention plan. Which have been edited by me in English language and found satisfactory

Mrs. J. CHRISTINA YAKKAL SAROJNI, M.A.,M.Phil.,
ASSISTANT PROFESSOR
DEPT. OF ENGLISH
VOORHEES COLLEGE, VELLORE-1

APPENDIX-F

CERTIFICATION OF TAMIL EDITING.

To whomsoever it may concern

This is to certify that Mrs. Saritha.V, II M.Sc Nursing, Department of Child Health Nursing has undertaken a dissertation for the partial fulfillment of M.Sc(N) Degree course. The title of the study is, "**Effectiveness of behavioral modification therapy on nocturnal enuresis among children of primary care givers (6-12years) at selected urban area, Vellore".** She has prepared the tool and intervention plan. Which have been edited by me in Tamil language and found satisfactory.

A.J. THEODORE RAJKUMAR
ASSISTANT PROFESSOR
DEPT OF TAMIL
VOORHEES COLLEGE
VELLORE 632 001

APPENDIX-G

SECTION:A

PART- I

SOCIO – DEMOGRAPHIC VARIABLES

1. Age of the child

1.1. 6-8 years ( )

1.2. 8-10 years ( )

1.3. 10-12years ( )

2. Sex of the child

2.1. Male ( )

2.2. Female ( )

3. Birth order of the child

3.1. One ( )

3.2. Two ( )

3.3. Three ( )

3.4. More than three ( )

4. Number of siblings

4.1. Zero ( )

4.2. One ( )

4.3. Two ( )

4.4. More than two ( )

5. Care taker

5.1. Father ( )

5.2. Mother ( )

6. Income of the family (in rupees)

6.1. ≤Rs.5000 ( )

6.2. Rs.5001 – 10,000 ( )

6.3. RS.10,001-15,000 ( )

6.4. ≤ Rs.15,001 ( )

7. Father's education

7.1. Illiterate ( ) 7.2. Primary ( )

7.3. Secondary ( )

7.4. Higher secondary ( )

7.5. Graduate ( )

8. Mother's education

8.1. Illiterate ( )

8.2. Primary ( )

8.3. Secondary ( )

8.4. Higher secondary ( )

8.5. Graduate ( )

9. Father's occupation

9.1. Unemployed ( )

9.2. Unskilled laborer ( )

9.3. Skilled laborer ( )

9.4. Professional ( )

10. Mother's occupation

10.1. Homemaker ( )

10.2. Unskilled laborer ( )

10.3. Skilled laborer ( )

10.4. Professional ( )

11. Both parents are living together

11.1.Yes ( )

11.2. No, if no ( )

11.2.1. Separated ( )

11.2.2.Death ( )

12. Previous history of enuresis in parents

12.1. Yes ( )

12.2. No ( )

12.3. Don't know ( )

13. Past history of enuresis in sibling

13.1. Yes ( )

13.2. No ( )

13.3. Don’t know ( )

PART-II

CLINICAL PROFILE

1**. History of UTI**

1.1. Yes ( )

1.2. No ( )

1.3. Don't know ( )

2. History of surgery in genital area

2.1. Yes ( )

2.2. No ( )

3. Pain during voiding

3.1. Yes ( )

3.2. No ( )

4. Day time incontinence

4.1. Yes ( )

4.2. No ( )

5. Day time urgency

5.1. Yes ( )

5.2. No ( )

6. Toilet training started at the age of

6.1. No ( )

6.2. Yes, if yes

6.2.1. < 3 years ( )

6.2.2.> 3 years ( )

7. Habit of bedwetting

7.1.< 3months ( )

7.2.> 3months ( )

8. Bedwetting time at night

8.1. 2 hours after sleep ( )

8.2. Midnight ( )

8.3. Early morning ( )

9. Consulted with physician for bedwetting

9.1. Yes ( )

9.2. No ( )

10. Have you tried any behavior modification therapy for nocturnal enuresis

10.1. Yes, if yes ( )

10.1.1. Regularly ( )

10.1.2. Occasionally ( )

10.2. No ( )

PART-III

CONTRIBUTING FACTORS OF NOCTURNAL ENURESISRELATED TO SCHOOL.

1.Problem in studying

1.1. Yes ( )

1.2. No ( )

2. Going to school is frightening

2.1. Yes ( )

2.2. No ( )

3. Teacher has punished / scolded in front of others

3.1. Yes, if yes ( )

3.1.1. Occasionally

3.1.2. Frequently

3.1.3. Always

3.2. No ( )

4. Fighting with friends in school

4.1. No ( )

4.2. Yes ( )

5. Comfortable with school toilets

5.1. Yes ( )

5.2. No ( )

6. Avoid using toilet at school

6.1. Yes ( )

6.2. No ( )

PART-IV

CONTRIBUTING FACTORS OF NOCTURNAL ENURESISRELATED TO HOME.

7. Frightening situation in family

7.1. Yes ( )

7.2. No ( )

8. Being compelled for academic achievement

8.1. Yes ( )

8.2. No ( )

9. Fear of toilet

9.1. Yes ( )

9.2. No ( )

10. Child having nightmares

10.1. Yes ( )

10.2. No ( )

11. Fear of animals

11.1. Yes ( )

12.1. No ( )

12. Having punished the child for bedwetting

12.1. Yes ( )

12.2. No ( )

13. Self – esteem is affected by bedwetting habit

13.1.Yes ,if yes ( )

1. Cry ( )

2. Guilty ( )

3. Afraid ( )

4. Avoid out staying ( )

13.2. No ( )

14. Feel bad about habit of bedwetting

14.1. Yes ( )

14.2. No ( )

SECTION B

PART - I

NOCTURNAL ENURESIS RATING SCALE					
		Mild	**Moderate**	**Severe**	**Profound**
SI. NO	**QUESTIONS**	**2 – 3 Times per week x 3 Months**	**4-5 Times per week x 3 months**	**5-6 Times per week x 3 months**	**>6Times per week x 3 months**
1.	Frequency of Nocturnal enuresis				

PART - II

	NOCTURNAL ENURESIS RELATED FACTORS RATING SCALE					
SI. NO	**QUESTIONS**	**NIL**	**RARELY**	**OCCASSIONALY**	**FREQUENTLY**	**ALWAYS**
1.	Sleep interrupted with bedwetting					
2.	Wake But avoid going to toilet					
3.	Drinking water frequently in the evening hours					
4.	Complaints of constipation					

Interpretation :

Mild – 0-5

Moderate – 6-10

Severe – 11-16

BEHAVIORAL MODIFICATION THERAPY FOR NOCTURNA ENURESIS

1.Night Lifting:

- Taking the child to the toilet during the night usually before the time when bedwetting is expected, without necessarily waking the child.

(Piyush Gupta, "Essential pediatric nursing". 2nd edition).

2. Waking with alarm:

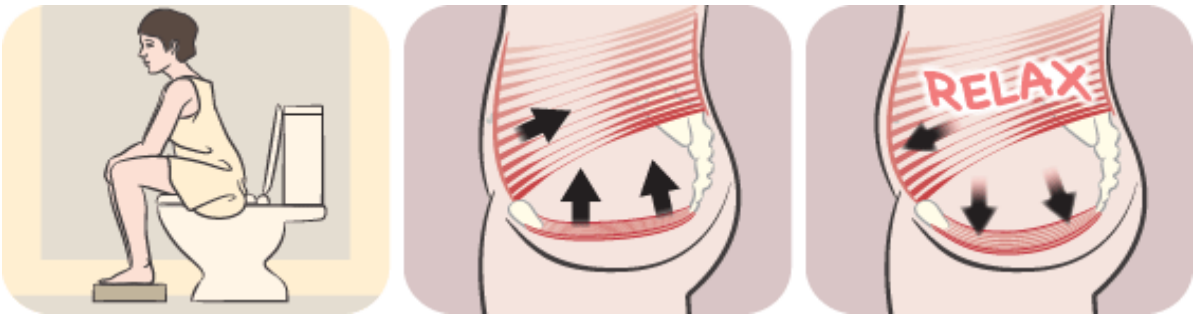
- Child should not be given liquids after 5 clock in evening and asked to urinate before going to sleep. Child should be fully aroused after 2 to 3 hours of sleep and walk unaided to the toilet to urinate.

(Assuma Beevi, "text book of pediatric nursing". first edition).

3.Stop- start- training:

- Teaching children to interrupt their stream of urine in order to strengthen their pelvic floor muscles.
- Hold urine as long as possible during the day.
- Repeated practice of starting and stopping the stream of urine at the toilet bowl.
- Practice getting up from bed and going to bathroom at bed time before sleep.

Step:1 Step:2 Step:3



- ❖ Step:1Go to the toilet when your bladder feels full – not 'just in case'. A good way to sit on the toilet is to relax and lean forward, with your feet close to the toilet and flat on a step on the floor.
- ❖ Step:2 Strengthen your pelvic floor muscles with exercises. Squeeze, lift and hold, as if you're trying to hold in urine or wind. Hold for as long as you can, but keep breathing. Your lower tummy will pull in too.
- ❖ Step:3 Relax, and you should feel the muscles letting go. Repeat this as many times as you can, up to eight times at any one time. You can do pelvic floor exercises sitting, lying down or standing.

(http:// www. jessicarealept.com/ tag/ pediatric-pelvic-floor).

4. Good bladder health recommendation:

- Children should be counseled to void regularly to prevent urgency incontinence.
- Avoid high sugar and caffeine based drinks for children with nocturnal enuresis.
- Children drinks 40 percent of their total daily fluids in the morning **(7^{am} to 5^{pm})** and only 20 percent in theevening (after 5pm). Ample consumption of fluid in morning and afternoon reduces the need for significant intake later in the day.
- The child should attempt to void regularly during the day and just before going to bed. (A total of 4 to 7 time).

(http://www.uptodate.com nocturnal enuresis in children: mgt).

5. Good bowel health recommendation:

- A high-fiber diet with plenty of fluids. This means loading your child's plate with plenty of fresh fruits and vegetables, high-fiber cereals, whole grain

breads (look for at least 3-5 grams of fiber per serving), and a variety of beans and other legumes.

- Encourage your child to use the toilet in the morning

(http://www.webmd.com/children/constipation-treatment).

6. Retention control training:

- Retention control training was initiated for children with reduced functional bladder capacity. The child drinks fluids and delays urination as long as they can tolerate in order to stretch the bladder to accommodate increasingly large volume of urine. Along with this, children practice pelvic exercise.

(Arvind, "textbook of pediatric nursing." First edition).

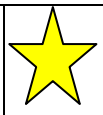
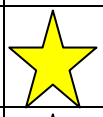
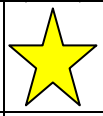
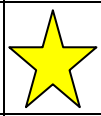
7.Reinforcement therapy:

- Reward system should serve as a positive reinforcement to the child for achieving dry nights. The rewards can be candy or stationary things like scale, pencil, rubber according to the child for achieving dry nights.

(Parul Datta, "pediatric nursing". 3rd edition).

My star chart

Name_____

Monday	
Tuesday	
Wednesday	
Thursday	
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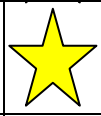
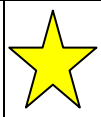
Saturday	
Sunday	

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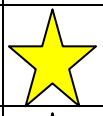
Tuesday	
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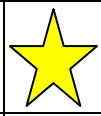
Thursday	
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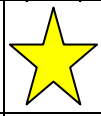
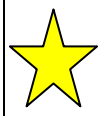
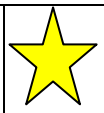
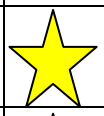
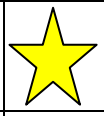
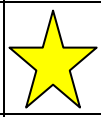
Saturday	
Sunday	

Monday	
Tuesday	
Wednesday	
Thursday	
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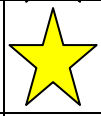
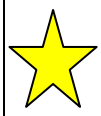
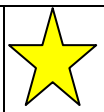
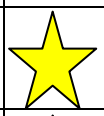
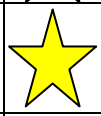
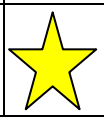
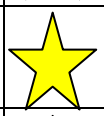
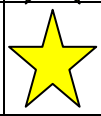
Saturday	
Sunday	

Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	
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பிரிவு – அ

பகுதி –I

பொதுவான விவரங்கள்

1. குழந்தையின் வயது

1.1. 6-8 ( )

1.2. 8-10 ( )

1.6.10-12 ( )

2. குழந்தையின் பாலினம்

2.1.ஆண் ( )

2.2.பெண் ( )

3. குழந்தையின் பிறப்பு வரிசை

3.1. ஒன்று ( )

3.2. இரண்டு ()

3.3. மூன்று ( )

3.4.மூன்றுக்கும் மேல் ( )

4. உடன் பிறப்புகளின் எண்ணிக்கை

4.1.பூஜ்ஜியம் ( )

4.2.ஒன்று ( )

4.3.இரண்டு ( )

4.4.இரண்டிற்கும் மேல் ( )

5. குழந்தையின் பாதுகாவலர்

5.1. அம்மா ( )

5.2. அப்பா ( )

6. மாதவருமானம்

6.1.≤ரூ.5000க்குள் ( )

6.2.ரூ.5001-10,000 ( )

6.3.ரூ.10,001-15,000 ( )

6.4.≥ரூ.15001மேல் ( )

7. தகப்பனார் கல்வித் தகுதி

7.1. படிப்பறிவு இல்லாதவர் ( )

7.2. தொடக்கக் கல்வி ( )

7.3. உயர்நிலை ( )

7.4 மேல்நிலை ( )

7.5 பட்டதாரி ( )

8. தாய்கல்வித் தகுதி

8.1. படிப்பறிவு இல்லாதவர் ( )

8.2. தொடக்கக் கல்வி ( )

8.3. உயர்நிலை ( )

8.4. மேல்நிலை ( )

8.5.பட்டதாரி ( )

9. தந்தை வேலை

9.1.வேலை வாய்ப்பு இல்லாதவர் ( )

9.2. பயிற்சி பெறாத தொழிலாளர் ( )

9.3.பயிற்சி பெற்ற தொழிலாளர் ( )

9.4.தொழில் வல்லுனர் ( )

10. தாய் வேலை

10.1. இல்லத்தரசி ( )

10.2. பயிற்சி பெறாத தொழிலாளர் ( )

10.3. பயிற்சி பெற்ற தொழிலாளர் ( )

10.4. தொழில் வல்லுனர் ( )

11. பெற்றோர்கள் கூடி வாழ்கின்றனரா?

11.1. ஆம் ( )

11.2. இல்லை ( )

இல்லை என்றால

11.1 1. பிரிந்து விட்டனர் ( )

11.2 2. இறந்துவிட்டனர் ( )

12. பெற்றொருக்கு சிறுவயதில் படுக்கையில் சிறுநீர் கழிக்கும் பழக்கம் உள்ளதா?

12.1.ஆம் ( )

12.2. இல்லை ( )

12.3. தெரியாது ( )

13.குழந்தையின் உடன்பிறப்பிற்கு படுக்கையில் சிறுநீர் கழிக்கும் பழக்கம் உள்ளதா?

13.1. ஆம் ( )

13.2. இல்லை ( )

13.3.தெரியாது ( )

பகுதி –II

இரவில் சிறுநீர் கழிக்கும் பழக்கத்திற்கான காரணிகள்

1. சிறுநீர் பாதையில் தொற்று நோய் உள்ளதா?

1.1 ஆம் ( )

1.2 இல்லை ( )

1.3 தெரியாது ( )

2. குழந்தைக்கு பிறப்பு உறுப்பில் ஏதேனும் அறுவை சிகிச்சை செய்து உள்ளனரா?

2.1 ஆம் ( )

2.2 இல்லை ( )

3. சிறுநீர் கழிக்கும் போது வலி உள்ளதா?

3.1 அ. ஆம் ( )

3.2 ஆ. இல்லை ( )

4. காலை நேரத்தில் தன்னை அறியாமல் சிறுநீர் கழிக்கும் பழக்கம் உள்ளதா?

4.1. ஆம் ( )

4.2. இல்லை ( )

5. காலை நேரத்தில் அவசரமாக சிறுநீர் கழிக்கும் பழக்கம் உள்ளதா?

5.1. ஆம் ( )

5.2. இல்லை ( )

6. சிறுநீர் கழிக்கும் பயிற்சி எந்த வயதிலிருந்து ஆரம்பித்தீர்கள்?

6.1 இல்லை ( )

6.2 ஆம்

ஆம் என்றால்

6.2.1. <3 வருடம் ( )

6.2.2.>3 வருடம் ( )

7. எவ்வளவு நாட்களாக படுக்கையில் சிறுநீர் கழிக்கும் பழக்கம் உள்ளது?

7.1.<3 மாதமாக ( )

7.2.>3 மாதமாக ( )

8. எந்தநேரத்தில் படுக்கையில் சிறுநீர் கழிக்கும் பழக்கம் உள்ளது?

8.1. தூங்கி. 2 மணி நெரம் கழித்து ( )

8.2. நடு இரவு ( )

8.3.அதிகாலை ( )

9. படுக்கையில் சிறுநீர் கழிக்கும் பழக்கதிற்க்காக மருத்துவரிடம் சிகிச்சை எடுத்துள்ளீரா?

11.1. ஆம் ( )

11.2. இல்லை ( )

10. இரவில் படுக்கையில் சிறுநீர் கழிக்காமல் இருப்பதற்க்காக ஏதேனும் பழக்க வழக்கங்கள் சொல்லி கொடுத்துள்ளீரா?

10.1.ஆ.ம் ( )

ஆம் என்றால்

10.1.1 எப்பொழுது ( )

10.1.2. பழக்க வழக்கங்கள் நடைமுறையில் உள்ளதா ( )

10.2.இல்லை ( )

பகுதி –III

இரவுநேரங்களில் சிறுநீர் தானாகக் கழித்துலுக்கான இணைக்காரணிகள்

பள்ளியை சார்ந்த இணை காரணிகள்

1. படிப்பில் ஏதேனும் பிரச்சனை உள்ளதா?

1.1. ஆம் ( )

1.2. இல்லை ( )

2. பள்ளிக்கு செல்ல பயமாக உள்ளதா?

2.1. ஆம் ( )

2.2. இல்லை ( )

3. உன் ஆசிரியை மற்ற மாணவர்கள் முன்பு அடிக்கவோ/திட்டவோ செய்துள்ளாரா?

3.1.ஆம் ( )

3.2.எப்பொழுதாவது ( )

3.3.அவ்வப்போது ( )

3.4.எப்பொழுதும் ( )

4. நீங்கள் உங்கள் தோழர்களுடன் பள்ளியில் சண்டைப்போடுவீர்களா?

4.1. ஆம் ( )

4.2. இல்லை ( )

4.3. எப்பொழுதாவது ( )

5. பள்ளி கழிப்பறை உங்களுக்கு வசதியாக உள்ளதா?

5.1. ஆம் ( )

5.2. இல்லை ( )

6. பள்ளியில் சிறுநீர் கழிப்பதை தவிர்க்கும் பழக்கம் உள்ளதா?

6.1. ஆம் ( )

6.2. இல்லை ( )

பகுதி –IV

வீட்டை சார்ந்த இணைகாரணிகள்

7. வீட்ழல் ஏதெனும் ஒரு சூழ்நிலை பயப்பட வைத்துள்ளதா?

7.1. ஆம் ( )

7.2. இல்லை ( )

8. நல்ல மதிப்பெண் பெறுவதற்க்காக யாரேனும் கட்டாயப்படுத்துகிறார்களா?

8.1. ஆம் ( )

8.2. இல்லை ( )

9. உங்கள் குழந்தைக்கு கழிப்பறையில் சிறுநீர் கழிப்பதற்க்கு பயம் உள்ளதா?

9.1. ஆம் ( )

9.2. இல்லை ( )

10. உங்கள் குழந்தை கனவு கண்டு பயந்துள்ளதா?

10.1. ஆம் ( )

10.2. இல்லை ( )

11. உங்கள் குழந்தை விலங்குகளை கண்டு பயந்துள்ளதா?

11.1. ஆம் ( )

12.2. இல்லை ( )

12. படுக்கையில் சிறுநீர் கழிப்பதற்காக உங்கள் குழந்தைக்கு தண்டனை கொடுத்துள்ளீர்களா?

12.1. ஆம் ( )

12.2. இல்லை ( )

13. இரவு நேரங்களில் சிறுநீர் தானாக கழிப்பதனால் உங்களது குழந்தையின் சுயமரியாதையில் பிரச்சனைஉள்ளதா?

13.1. ஆம் என்றால் ( )

13.1.1. அழுதல்
13.1.2.வெட்கப்படுதல்
13.1.3. பயப்படுதல்
13.1.4.வெளியில் தங்குவதை தவிர்த்தல்

14. படுக்கையில் சிறுநீர் கழித்தலை தவறான பழக்கம் என்று எண்ணம் உள்ளதா?

14.1.ஆம் ( )

14.2.இல்லை ( )

பிரிவு –ஆ

பகுதி –I

சிறுநீர் பழக்கவழக்க அளவுக்கோல்					
வ. எண்	வினாக்கள்	முதமான	அதிகமான	மிக அதிகமான	ஆழமான
		வாரத்திற்க்கு 2-3 தடவை. x 3 மாதத்திற்கு	வாரத்திற்க்கு 4-5 தடவை. x 3 மாதத்திற்கு	வாரத்திற்க்கு 5-6 தடவை. x 3மாதத்திற்கு	வாரத்திற்க்கு 6 தடவைக்கு மேல் x 3 மாதத்திற்கு
1.	எத்தனைமுறை படுக்கையில் சிறுநீர் கழிக்கின்றனர்				

பகுதி –II

சிறுநீர் பழக்கவழக்க சம்மந்தமான காரணிகளின் அளவுக்கோல						
வ. எண்	வினாக்கள்	இல்லை	அரிதாக	எபபொழுதாவது	அவ்வப்போது	எப்பொழுதும்
1.	படுக்கையில் சிறுநீர் கழிப்பிதால் தூக்கம் தடைப்படுகிறதா?					
2.	தூக்கத்தில் இருந்து எழுந்து ஆனால் கழிப்பறைக்கு செல்வதை தவிர்த்தல்					
3.	தூங்கும் முன்பு அதிக தண்ணீர் குடித்தல்					
4.	மலச்சிக்கல்					

வகைப்படுத்துதல் :-

மதிமான – 0-5
அதிகமான – 6-10
மிகஅதிகமான – 11-1